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ABSTRACT

The role of governments in the operation of education research and development systems is under critical scrutiny throughout the developed world. The introductory chapter presents the main themes of a seminar held in 1992 and outlines challenges for further work. The next 10 chapters focus on education research and development issues: (1) "Educational Research Policy in the United States: Background and Overview for the Joint OERI/OECD Seminar" (Tommy M. Tomlinson); (2) "Trends, Issues and Problems in Educational Research in a Group of OECD Countries" (Desmond L. Nuttall); (3) "The OERI/CERI Seminar on Educational Research and Development: A Synthesis and Commentary" (Michael Huberman); (4) "Research and Education Reform: A Study of the Federal Role in United States' Education Research and Development" (Katherine Bick; Gregg B. Jackson); (5) "Changes in the Relationship between Educational Research and Policy: The Case of the Netherlands" (Paul M. M. van Oijen); (6) "Teachers as Critical Consumers of Research" (Michael G. Fullan); (7) "Near the Chalk Face: New Approaches to Research for Education Renovation" (Bob W. Connell); (8) "Uniting Producers and Consumers: Challenges in Creating and Utilizing Educational Research and Development" (Susan H. Fuhrman); (9) "In Search of New Structures and Procedures for Organizing Government Funded Education Research and Development" (Thomas K. Glennan, Jr.); and (10) "Afterwards: Research and Reform in the United States" (Tommy M. Tomlinson). Biographies of the 11 authors follow the articles. (CK)

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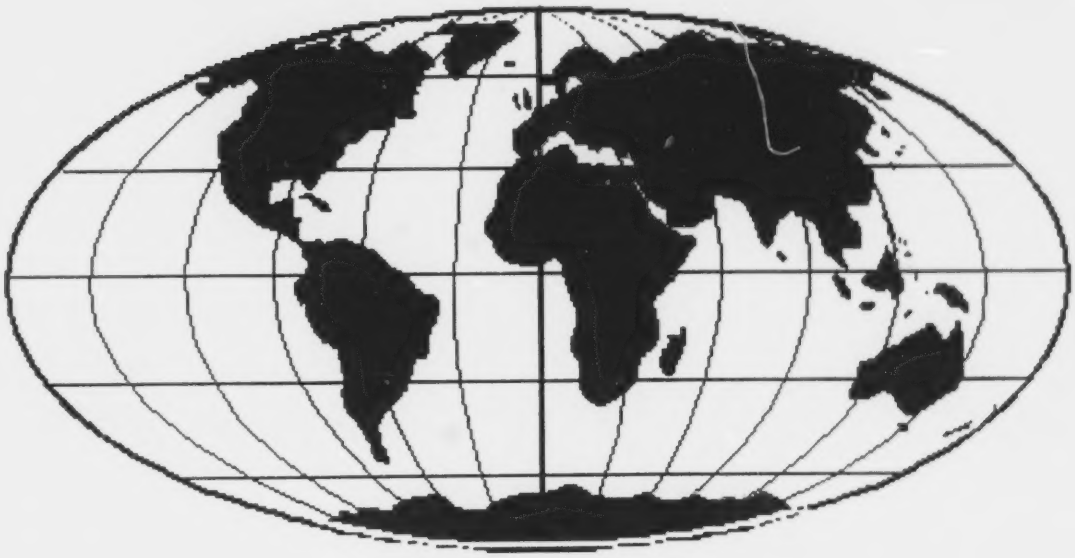

AN INTERNATIONAL PERSPECTIVE

OECD
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PREFACE

In June 1992, I participated as a discussant in the joint OECD/OERI seminar on trends and issues in education research and development that produced the chapters in this volume. At the time, I was the director of the Center for Innovation at the National Education Association, America's largest teacher's union. The Center was a modest enterprise, unrelated to the federal government and devoted to the development of programs to improve the quality of teaching in the nation's public schools. Now, I am the Assistant Secretary of the Office of Educational Research and Improvement (OERI) and directly and deeply involved in the redesign and reauthorization of the federal agenda for education research and development. Thus, the centerpiece of the June seminar—the reform and revitalization of American education research and development in general and the OERI in particular—is now among the principal preoccupations of my worklife. It is a radical change in perspective, but a welcome one.

Although the scale of the task I have now undertaken greatly exceeds the one I faced at the Center for Innovation, the questions that must be asked and the obstacles that face their satisfactory resolution are remarkably similar. I believe now, as before, that the most important step that could be taken on behalf of improving the quality of education research and development is to enlarge and enhance the part teachers play in setting the research agenda and developing programs. I believe further that the classroom is at once the most important source of ideas and the greatest challenge to the improvement of education research and the utilization of its results. For if education research and development is ever to earn its keep, not to mention the rewards and respect that have to date seemed so elusive, then the issues it informs and the programs it produces must speak to classroom life as teachers and students experience it. Not that issues outside the classroom are secondary phenomena, but the very heart of education—teaching and learning—is rooted in the classroom and it is there research can (but has yet to) exert its greatest influence.

The contents of this volume indicate that the role of governments in the operation of education research and development systems is under critical scrutiny throughout the developed world, and nowhere more than in the United States. This year, the first following the election of President Bill Clinton, the principal federal education programs—including those of OERI—are due for reauthorization and renewal. We have taken this opportunity to dramatically redesign the federal role in American education.

Following the appointment of Richard Riley as Secretary of Education, the United States Department of Education introduced a new conception of education reform and reform initiatives. For the first time in our nation's history, voluntary national standards will be developed in all major content areas and offered to the states as benchmarks of excellence which they may use to gauge standards of their own design. But even this unprecedented step is only half the story. We will also propose that voluntary standards be developed to gauge a child's opportunity to learn, that is, standards for the kind and quantity of resources that are required for all children to meet higher expectations. In short, we have sent Congress a proposal that would establish

voluntary standards for resources as well as the results that are required to achieve world-class standards of educational excellence.

In light of these actions, the role of education research and development must also shift in new and uncharted directions. The states will require research support and technical assistance as they engage in the design and development of their own standards for curriculum and achievement. Research will be required to establish the nature of the relationship between school resources and the academic achievement of children of varying abilities and backgrounds.

Congress has responded with plans to reauthorize OERI so that its structure and mission are compatible with the research and development tasks that are necessary to realize the new standards. Among these tasks are the definition of opportunity to learn for at-risk children, the development of new standards of curriculum and instruction, methods of assessment that meet the new and higher standards of excellence, and the changes in governance and management of schools that emerge as the nation moves from exclusive reliance on local determination of education standards to voluntary national standards of excellence.

As a consequence of these developments, we have the chance to dramatically alter the path and purpose of American education research and development. Whether we succeed in whole or in part will be determined in the short term by the results of our negotiations with the Congress and in the long run by the validity of our ideas and reforms, and, of course, the level and duration of our investment in the process.

All of these contingencies notwithstanding, we will continue to pursue the goals established at the Washington seminar and outlined by OECD/CERI in the first chapter of this volume. Just as we hope to contribute to a better understanding of education research and development systems through our efforts to improve our own, we hope to benefit from the results of the comparative examination that is being sponsored by CERI. In the best of all worlds the redesign of our research and development system will provide a model with cross national validity. Short of that, we can benefit from sharing our experience and participating in the continued study of the development and implementation of education research wherever in the world it takes place.

Sharon P. Robinson
Assistant Secretary
Office of Educational Research
and Improvement

Part I

CONFERENCE PROCEEDINGS

Chapter 1

INTRODUCTION: THEMES AND QUESTIONS FOR AN OECD STUDY ON EDUCATIONAL RESEARCH AND DEVELOPMENT

by

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Eight of the eleven chapters in this volume were commissioned for an international seminar on trends and issues in educational research and development. This seminar was held in Washington, D.C., under the joint sponsorship of the U.S. Department of Education's Office of Educational Research and Improvement (OERI) and the OECD's Center for Educational Research and Innovation (CERI).

The purpose of this introductory chapter is to present the main themes of the seminar, and to place these against a background of pertinent questions about the orientation, organization and usefulness of educational research. A second aim is to introduce the chapters and to outline some challenges for further work.

Background

At their meeting in Paris in November 1990, the OECD Ministers of education addressed the importance of strengthening the basis for educational research and innovation. The following statement is taken from the Ministers' press communique (reprinted in OECD, 1992):

> "In general, the level of investment in research and development in education and training is far lower than in any other sector of comparable size. The potential of educational research as an integral element of improvement remains largely underdeveloped, whether at the national, regional or local level. Traditional academic research has its own special part to play. More important still, much research and development needs to be grounded in practice, involving staff and institutions, whether individually or collectively, in a constant process of diagnosis, comparison and analysis. To achieve this, experimentation and innovation should be given strong support."

Several points can be extracted from this statement. First, it appears that the potential contribution of educational research and development in improving policy and practice has not

been fully realized; second, the Ministers expressed some concern about the financing of educational research; third, the systems for educational research and development in the OECD Member countries are in need of restructuring so that such funds as are available can be most effectively used.

The statement also raises a number of pertinent questions. First and foremost, why is the issue of educational research policy brought up on the political agenda in 1990, after an absence of about 15 years? Why have public funds for educational research lagged behind public funding for research in other sectors of government policy? Why is there a feeling that educational research has not fully lived up to expectations? What are these expectations, and in which respects may improvement be called for? And, finally, how can the systems for educational research and development in the OECD countries be strengthened?

These questions are addressed in the chapters contained in this volume. Two main themes are behind most of the questions: first, critical questioning of the nature and value of educational research and development and, second, expectation as to the potential value of educational research in contributing to school improvement.

At a general level the seminar reflected the position that there are sound, practical reasons for studying the problems confronting the educational research and development system. Because such research is expected to be an important factor in educational innovation and improvement, the critical study of the role of research in improving practice can offer new insights and an understanding of the options and strategies for better aligning research and policy systems.

Aims of the Seminar

Following an offer by the United States Department of Education to host a seminar in Washington, DC, on the role of governments in educational research and development, the CERI Governing Board agreed to sponsor such a meeting. The Governing Board considered that the seminar would offer an opportunity to review the question whether CERI should launch a comparative study on important issues and trends in the orientation, organization and application of educational research.

The specific aims of the seminar were as follows:

- To assess the recent and emerging issues in educational research and development, particularly as regards the organization, financing and the priorities for research;

- To analyze the different issues and problems related to the creation and utilization of educational research, taking into account the views of both the producers and the consumers of research; and

- To reflect on the lessons and implications for the role of governments in the organization and funding of educational research and development.

In addition to the above aims, the seminar was also intended to provide the U.S. Department of Education with an international platform for disseminating and discussing the findings and policy implications of a recently conducted study on research and educational reform, which was carried out under the auspices of the National Academy of Sciences by a commission with representatives from different interest groups (Atkinson and Jackson, 1992).

Before examining the proceedings and some of the outcomes of the seminar, it will be necessary to explore the background of the questions that were addressed—questions that continue to be asked in the United States and other Member countries by both the research community and the consumers of educational research, mainly policymakers and practitioners.

Crisis of Confidence in Educational Research

During the 1950s and 1960s there was a firm belief in what social science research, including educational research, could do in providing the scientific and rational basis for the solving of concrete problems; knowledge that could be used in the framing of better public and educational policies. This functionalist model of the role of social science research in producing facts and applying knowledge in problem-solving offered a rallying point around which policy-oriented, quantitative research attained legitimacy. Confidence in the role of empirical research in elucidating the policy implications of changes in the relationships between education, the labor market and the economy ran high, at least until the early 1970s, when interpretative methods began to spread.

By the mid-1960s it had become clear that the OECD countries faced similar problems in developing and expanding their educational systems, for example, problems concerning the satisfaction of individual and social demands, the planning of resource allocation and particularly the development of the scientific and technical manpower needed in order to sustain development in modernizing economies. Because many of the questions were identical, the result was a degree of similarity even in the orientation of the research programs that were being developed at that time. Recognition of this commonality led to a demand for the international dissemination of research findings. In turn this led to the creation of common research programs and the establishment of international platforms for research collaboration. The Centre for Educational Research and Innovation, which was established at the OECD in 1968, is a good example of an institution founded to promote cooperation in this policy field.

In a CERI study, Eide (1971) examined the role of research in the planning of social policy. A central consideration then was whether educational research should provide

prescriptions or whether it should concentrate on the restatement of problems and the formulation of policy options.

Another study assessing the position of educational research and its relationship to policy was conducted a few years later (OECD, 1974). The main themes of the survey were the goals of educational research, its relationship to practice and the part research plays in decisionmaking. The study noted that considerable difficulties were encountered in preparing the survey, notably because the institutional status of educational research had remained uncertain in the majority of the countries. The survey also identified two basic issues in the development of an effective relationship between educational research and policy. The first was that an unambiguous relationship between research and development was often lacking. The second issue was the lack of a clear, linear relationship between educational research and policymaking.

The general inability to address these issues led to a gap between high expectations and promises on the one hand, and frustration with actual performance on the other. Thus, disappointment replaced some of the previous enthusiasm. This sparked a heated discussion about the proper role of social and educational research. The ensuing *Methodenstreit* or paradigm controversy—an often bitter argument within the academic community about the validity and usefulness of competing theoretical and methodological frameworks in the social sciences—did little to restore faith in the value and applicability of the knowledge produced by educational researchers. By the end of the 1970s, a sense of resignation or even fatalism concerning the possibility of realizing major educational reforms through empirical research focused on the pursuit of generalizable knowledge had become widespread not only among decisionmakers and teachers but, significantly, also among many researchers.

The apparent crisis of confidence in the value of some educational research, as documented by reports of congressional committees and study groups in the United States and elsewhere, in most countries did little to stop the general slide in research funding. This situation prompted the field to undertake studies of the relationships between research, policymaking and school improvement. One example is a volume edited by Husén and Kogan (1984). On the basis of a review of the various functions of educational research, the authors note that the crisis besetting the research system was partly due to the overselling of the findings produced by research. This attitude reflected an almost naive belief in the linearity of the relationship between "quantitative" social science research and decisionmaking. Planners and administrators, in their search for empirical facts in support of rational decisionmaking, as well as educators seeking to improve the teaching and learning process, were supposed to be the consumers of the products created by social and educational researchers. Opposition to this perspective mounted during the 1970s, when researchers increasingly turned to "qualitative" or "interpretative" methods. Action research, ethnography, discourse analysis and other hermeneutical and phenomenological approaches to policy research became increasingly popular among the growing number of researchers, who did not share the basic tenets of the functionalist interpretation of the relationship between educational research and decisionmaking—the dominant model at that time.

The resulting increase in the legitimacy and the frequency of use of interpretative methods was one of the main events in the history of the social sciences during the latter half of the 1970s.

During the 1980s, once the inadequacy of the linear model was widely acknowledged, the debate shifted to the value of other ways in which the potential contribution of research could possibly be realized. The main questions were similar to those formulated by Eide (1971) more than a decade previously: How can the needs of the government and the practitioners be best met? What role can or should educational research play in helping the government and practitioners plan and assess educational policy?

Inventory of Problems

These themes feature prominently in the national case studies prepared for the Washington seminar. These case studies, which are reviewed in a subsequent chapter, describe the important features of each country's educational research system and outline emerging trends and issues. The authors of these case studies were asked to focus on the following problems and issues:

Orientation of Research and Development

- Who participates in the setting of research agendas and in carrying out the proposed studies?
- What are the long-term needs of policymakers and practitioners for educational research?
- What are the distinctive characteristics of educational research?

Organization of Research and Development

- What are the options for organizing educational research studies and development activities, especially those initiated or funded by governments?
- What are the initial sources of funds for research and development, and how are these funds distributed?

Application of Research and Development

- What contributions does educational research make to basic and applied fields of study, to policy formulation, and to improving educational practice?
- What strategies, theories and models might be employed for sustaining and improving the role educational research can play in school innovation and improvement?

These questions are reviewed in detail in the subsequent chapters. Their relevance is not in doubt, since they have been at the heart of a growing number of investigations initiated either by government agencies, as in Australia, Germany, the Netherlands, Sweden, Switzerland and the

United States, or by scholars, academies and research councils (Weiss, 1982; Fend, 1990; Shavelson, 1990; Kirst *et al.*, 1991; Gage, 1991).

Orientation of Educational Research

In examining the educational research and development systems of the OECD countries it should be borne in mind that there is no agreement at the international level about the precise meaning of the term "educational research and development." The basic issues concerning the definition of research and development, and the conventions associated with its use, are provided in Chapter 2 of the fifth edition of the Frascati Manual (OECD, 1993). This manual, which is named after the place in Italy where it was first adopted nearly 30 years ago, has been written by and for the national experts in Member countries who collect, publish and use national R&D data, and who aggregate and submit the data to the OECD in accordance with pre-specified formats, so as to enhance accuracy and comparability (OECD, 1987). The latest revision of the Frascati Manual defines the terms as follows:

> "Research and experimental development (R&D) comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society and the use of this stock of knowledge to devise new applications."

The key distinguishing characteristics of research and development, as defined by the OECD are originality and investigation as a primary objective. The Frascati Manual also lists a large number of activities that are excluded from the definition of research and development. For educational research, several of these exclusions—for example, policy analysis in education—may pose problems. These conceptual issues are compounded because the field is of relatively recent origin and involves a variety of disciplines, both in universities and in special research centers. While multidisciplinarity is an essential feature of educational research, it does also constitute a problem of identity.

The balance between research initiated by the public authorities and field-initiated research is crucial. The latter can be divided into research initiated by practitioners and studies initiated by the researchers themselves. It can play a major role in promoting partnerships among researchers, teachers and other practitioners. On the one hand, there is a need for 'quick-and-dirty,' problem-oriented studies in the applied sector (see Chapter 8), which may be small-scale, short-term, and rather disconnected from the mainstream of academic research. On the other hand, research also needs to be coordinated and sustained over a long period. The scale and duration of support provided for educational research is often less than needed to make substantial progress on the complex and difficult problems faced by decisionmakers and by teachers in the classroom.

Organization and Funding of Educational Research

Several patterns of organizing educational research and development can be discerned among the OECD countries (Council of Europe, 1992). King (1990, p. 30) observes that some countries take a far more inclusive view of their research responsibilities than others, that some extend the network of research partnerships more widely, and that some more directly acknowledge the role of research for policymaking. Some countries such as Spain, have set up research institutions within the Ministry of Education, whereas other countries such as France, Germany and the Netherlands have created research institutions that, while being outside the Ministry, are closely affiliated with it. There are specialized university institutions for educational research in most countries, and in addition some operate private or public institutions supporting school development and innovation in the country, such as in the case of the Institute for Curriculum Development (Stichting Leerplan Ontwikkeling, SLO) in the Netherlands and the regional research laboratories in the United States. Research councils and foundations moreover play an important role in Ireland and the United Kingdom. As the chapters in this volume show, this diversity in approaches and solutions must be kept in mind when examining the options for defining a coherent policy for educational research in the OECD countries.

There is evidence in some countries that the level of public support for educational research diminished during the late 1970s and 1980s in relation to both the volume of public spending on the education sector and compared with other fields of public policy. In the United States, for example, the Department of Education's research budget has always been a small percentage of its overall funding, but even this figure has declined dramatically since 1973. From 1973 to 1986, total spending by the Department of Education increased by 38 percent in constant U.S. dollars. In the same period, expenditures on research, statistics and evaluation fell by 69 percent in constant dollars (U.S. Congress, 1988, p. 25). The recent trends in the finance of educational research and development are discussed in Chapters 2 and 3.

It is not uncommon that the funds allocated to educational research represent less than half a percent of aggregate public spending on education. Case studies and data from the OECD show that other knowledge-intensive sectors of the economy—for example, medicine— tend to spend a much higher percentage on research—for example, in Australia and the United States (Australian Research Council, 1992; Atkinson and Jackson, 1992). The funding of educational research tends moreover to be highly politicized. In a study conducted for the U.S. National Academy of Education, Kirst *et al.* (1991, p. 32) note that the problem is not insufficient funding per se but rather the lack of a comprehensive, effective strategy of research and development for school improvement.

Application of Educational Research

In the light of the scale of government-funded educational research and development, the question of utilization and application is of pressing importance. At the same time, research

serves other purposes–for example, the development of scientific knowledge—which must be reconciled with more instrumental and shorter term needs. It entails complex relations between the producers of research and the principal consumers—policymakers and practitioners—that require further analysis.

The comparatively unfavorable level of financial support for educational research at least partly reflects a climate of doubt among policymakers and practitioners about the usefulness and applicability of educational research. This attitude originates not only in the uneven quality of much research but is also influenced by problems of coordination and insufficient attention to research dissemination and reporting. This makes it difficult to raise additional funds, because policymakers are not always convinced that more money will have the intended effect on school development and innovation.

The position of the United States Government *vis à vis* educational research in the mid-1980s in many ways typified a general malaise in the OECD countries. In 1985 the United States Congress appointed a special task force to provide a basis for judgment on the future of financial support for social and educational research by the federal government. Whyte (1986, p. 555) quotes from the report as follows: "... the social sciences have contributed little to the planning of government policies or actions ... (it) questions the value of federal support for such research." The research community, however, does not always share this negative view of the value and usefulness of social and educational research (Kaestle, 1993). For example, Kirst *et al.* (1991, p. 6) observe:

> "The study argues that while researchers have not developed the equivalent of antibiotics or hybrid corn, investigations conducted in universities and in schools themselves have played a crucial role in shaping the structure and content of schooling and in deepening our understanding of the educational process. Educational research has led to fundamental reorientations in our knowledge of human development, learning theory and its applications, testing and assessments, the nature of disabilities, and curriculum design."

Helped by studies pointing to the importance of research and evaluation studies which succeeded in bringing the researchers in a direct relationship with decisionmakers and practitioners, the controversy over the value of educational research lessened somewhat during the late 1980s and early 1990s. The problem began to be recast from one concerning the usefulness of educational research to questions about how the research system can be strengthened and made more effective. There have been major developments in the OECD in relation to these questions; the search is on for new structures and procedures for organizing publicly funded research and development that contributes to innovation.

Improving the Research System and its Relation to Policy

The Swiss Science Council recently invited an international team of scholars to examine the state of Swiss social scientific research and to make a diagnosis of the strengths and weaknesses of the social sciences, particularly in four disciplines: educational science, political science, psychology and sociology. The examiners note several generic problems that limit the applicability of social research (Swiss Science Council, 1993, pp. 9-10):

- The gap between teaching and research policy, with a lack of coherent national and university level strategies for coordination;
- Relatively low levels of cooperation across institutions and disciplines; and
- Underdevelopment of research management, with a consequent failure to realize opportunities in applied research, and a lack of appreciation of the close synergy between applied studies and more fundamental research.

Recent reviews of policies and strategies in the OECD countries—the Swiss study is only one example among others—highlight the changing context and directions for educational research in the Member countries. Complex societies and educational systems require a sound knowledge base for planning and decisionmaking, at both local and central levels. Because educational research has much to contribute to this knowledge base, the formulation of a long-term educational research and development policy is a key requirement. But this cannot be realized without a clear and long-term vision of the development of the education system itself. The objectives of a coherent research policy in education that is relevant to practice can only be decided if the broad contours of education policy have been clarified, since without such clarification and without leadership in the education system it will be difficult to define the role and weight of educational research and development in piloting policies at both the center and the periphery. Hence the use of the results of educational research in policy and practice can be successful only if a "revolution" can be brought about in the attitudes and perspectives of the various stakeholders, including key actors in practice, policymaking and research.

In order to improve the potential of educational research and innovation as a means for monitoring progress and identifying areas where improvement may be needed, strong support is obviously needed. However, an increase in the input and output of the research system does not necessarily produce the desired outcomes, since this to a large extent depends on the methods and channels for research utilization that are in place. Careful thought must therefore be given to the ways in which an increase in the funds available for educational research may be optimally beneficial to all parties, both the consumers and the producers in both the short and the long term.

Most participants in the Washington seminar agreed that political agents and the educational research community often operate at a long distance from each other, and that mutual appreciation is often lacking. A dearth of systematic communication also besets the relationships

between school practitioners and researchers in education and related disciplines. The research system can therefore be made more effective in some respects if the interaction among policymakers, researchers and practitioners is improved. This naturally depends on which perspective is taken regarding the role of the research community *vis à vis* the policy community and practitioners.

The seminar identified some ways and strategies for overcoming the general concerns and structural problems identified above. A consensus emerged that it would be important for the researchers to involve practitioners in the design and actual conduct of school innovation projects, and to advertise and disseminate their findings more effectively. This conclusion is similar to the one reached by Kirst *et al.* (1991, p. 6) in a study of the ways in which the research system can be adapted so as to improve its relevance for policy and practice:

> "... connecting theory to practice is more than examining instructional effectiveness or devising new forms of professional development. It also means placing research in the service of teaching and school improvement. Teachers and researchers must be collaborators in constant communication with each other, but this will involve new roles for teachers and students ..."

The aims and means of improving the interaction between researchers and practitioners are discussed in Chapters 7, 8, 9, and 10. Collectively they show that much is currently happening in the OECD countries. Examples are the creation of school-university partnerships and "professional development" schools, which are actual schools that also serve as laboratories for research and teacher training. Another example is a new policy envisaged in the Netherlands, according to which a share of public research funds is allocated to schools. This will empower practitioners to play a role in the formulation of the research agenda, and will make it possible for them to contract researchers and specialists in educational innovation.

The challenge of strengthening the involvement of practitioners is paramount but also difficult to realize. Laderrière (1990) mentions several obstacles: First, the dominating concept in several circles of teaching and learning as an art and of education as an ascientific activity. Second, the definition of the position and role of teaching staff, which normally does not specify a personal obligation to systematically assess the outcomes of the teaching and learning process. Consequently, teachers are often not committed to serious initiatives in educational research. A third factor is that the average teacher has not developed competence in research methods, especially in action research.

Conclusion

Clearly, no firm conclusions can be offered at this early stage in the CERI study on trends and issues in educational research. The purpose so far has been to explore the questions and

themes for an international study on R&D policy. The next step will be to examine the issues in the light of the R&D policies, traditions and experiences gained in other areas of the OECD. It would be particularly interesting to contrast the North American approach to government-funded educational research with the models existing in the Asian and Pacific region, the Nordic countries, the German-speaking countries, France and Southern Europe. Since much can be learned by examining the similarities and differences among the OECD countries, further work on the CERI study will most likely involve follow-up seminars in countries presenting interesting case studies and models for the organization and funding of educational R&D. A second line of work will be to define and develop quantitative indicators of research and development systems. Such indicators can measure public and private funding, research priorities, and staffing, as well as certain outcomes of the research system. Drawing on these indicators and country experiences, the challenge will be to identify ways of better aligning the multiple interests of the stakeholders—policymakers, researchers, and practitioners.

Note

1. This chapter was written by the CERI staff responsible for the study on educational research and development, notably Albert Tuijnman and Jarl Bengtsson.

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Chapter 2

EDUCATIONAL RESEARCH POLICY IN THE UNITED STATES: BACKGROUND AND OVERVIEW FOR THE JOINT OERI/OECD SEMINAR

by

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This chapter offers a general background and introduction to the seminar on trends and issues in educational research and development jointly sponsored by the Office of Educational Research and Improvement (OERI) and the Center for Educational Research and Innovation (CERI), held June 1-2, 1992, in Washington, DC. The chapter provides a brief political history of the federal role in education research and development in the United States during the past 25 years and explains the purpose of the seminar and the justification for bringing an international perspective to the issue.

Overview

U.S. education research has been faulted for failing to yield results that can be applied in the classroom, that is, for failing to develop a "technological prescription" for school improvement. Education research has yet to win acceptance on the basis of its contribution to the resolution of policy conflicts or to the improvement of educational practice or decision-making. Partly as a consequence of this "failure," federal support for education research and development has declined over the past 15 years. In contrast to the depressed state of federal research and development, there has been a significant increase in resources allocated to the development of statistical indicators of the condition of American education. Moreover, state systems and big city school districts have boosted their research and development capabilities, thus compensating substantially for the decline in federal support for research. As a consequence of these changes, the shape and nature of the American research and development system has been significantly altered.

Tommy M. Tomlinson

The Rise and Fall of American Education Research and Development: 1965-1975

In the span of a single decade federal support for education research and program development passed from a state of promise and prestige to one of humiliation and threat of extinction. In 1965, at the outset of President Lyndon Johnson's "war on poverty," education was a major plank in the government's platform of anti-poverty strategies, and education research and development were the tools by which new and improved methods of teaching poor and minority children would be constructed and delivered. New education research and development institutions were built, among which were research centers to provide the knowledge necessary to improve the instruction of poor children, and a national network of educational laboratories to assist in the introduction of the new knowledge into the schools themselves.

The plan was inspired. These new institutions would enable the concerting of effort and, when combined with university-based (field-initiated) research, would provide the necessary mass of information required to provide answers to pressing education issues. Moreover, when placed in the hands of the new educational laboratories, which would translate the new insights into methods and language comprehensible to teachers and principals, complaints that education research was fragmented and of little practical significance would be overcome. Better science through sustained and rigorous research would open the "black box" of learning.

In 1965, Congress authorized the funds necessary to create the research centers, followed closely by support for the laboratories, and by 1967 10 centers and 20 laboratories were planned. At about the same time, the Educational Resources Information Center (ERIC) was authorized, and 12 clearinghouses designed to distribute education research and development documents throughout the nation were developed. With ERIC designed to abstract, store, retrieve, and disseminate research knowledge, the picture of a more-or-less model federal research and development system was completed: research centers to provide the knowledge, educational laboratories to assist in its implementation, and ERIC to disseminate the results to consumers. These developments marked the high point of the federal effort on behalf of knowledge development and dissemination in education. Within 5 years the system would collapse to its present dismal state, a victim of acrimonious debate about the mission and legitimacy of the new institutions:

- Research centers were criticized because they were isolated from schools and teachers as well as the academic field and because the research they produced was narrow and academic in focus, hence unrelated to the "realities" of the schools and problems of teachers;

- Educational laboratories struggled to define their role *vis à vis* the schools (should they provide direct assistance or serve as a general resource), their area of service (local, regional, or national), and the appropriate form of accountability (customer satisfaction, student achievement, standards of quality);

- ERIC was plagued by complaints that the documents were not quality-controlled (more chaff than wheat), the system was hard to access, of little use to researchers and even less to teachers, and slow to answer requests.

Worse, perhaps, necessary and projected budget increases were not forthcoming, causing substantial reductions in the level of effort for both laboratories and centers. Five laboratories lost their support in 1969 and four more in 1971. The centers were not immune, as their budgets shrank from about $15 million to $11 million during the same period. The costs of the Vietnam war had forced the reductions and in 1971, following growing complaints about the quality and worth of the laboratories and centers in particular and educational research in general, the entire lot was transferred to the newly created National Institute of Education (NIE) in 1971. It was a legacy that NIE would never master. The laboratories and centers quickly coalesced to become a rival institution under the name Council for Educational Development and Research (CEDaR), successfully competing with the NIE for resources and political influence.

Conceived as education's analogue to the prestigious National Institutes of Health, the NIE started life facing three obstacles, any one of which was sufficient to stunt the development of the fledgling organization:

- The first burden was the laboratories and centers themselves and the task of improving the quality of their work and defining their roles in the research and development system, and then, hardest of all, persuading them to accept the NIE's definition and authority on these matters.

- The second obstacle was the nature of the task. NIE was specifically mandated to remedy the problems of disadvantaged and minority students, and consequently most of the research and program activities, the success of which NIE depended upon, were aimed at the populations and problems that were historically the most difficult to treat.

- The third and probably most directly debilitating problem was the political winds that constantly blew from every quarter and which forced continuous course changes in a fruitless attempt to make headway. NIE was a creation of the Nixon administration and some Congressmen sought to express their displeasure with the President through their treatment of his initiatives. The putatively natural constituents of

NIE—educational researchers, teachers associations, and even the labs and centers—were each for different reasons critical of NIE, and many took their complaints to the Congress for resolution. Finally, the susceptibility of educational research to charges of politicization and ideological influence from both left and right was irresistible, and NIE became the whipping boy in the arguments between the Congress and the political party and administration in office.

NIE was unable to overcome any of these obstacles. In an economy pinched by the costs of war, NIE was threatened with zero funding. After long debate, Congress settled on a budget barely sufficient to sustain the labs, centers, and ERIC, and hardly a cent for new initiatives. Thus, within 3 years NIE had gone from an institution of promise to one that was moribund and programmatically inert; from a research budget of $136 million to less than $60 million, most of it mandated by Congress to the labs and centers. NIE's fate, however, was less a consequence of a failed model of a system of education research and development than it was a victim of the social, economic and political context in which it was developed. It is a lesson with universal application.[1]

Current Status of Research and Development in the United States

Two unexpected developments have filled some of the vacuum left by the shortfall in federal resources:

- Compensating substantially for the decline in federal support for research, state systems and big city school districts have boosted their research and development capabilities, as have other sources, both corporate and philanthropic. In so doing, the shape and nature of the U.S. system for educational research and development has been significantly altered. State-supported research adheres more closely than federal initiatives to the particular needs of states and localities, and presumably speaks more directly and efficiently to the solution of local problems. However, because not all states and localities can afford to mount their own research and development system, the task of validation and dissemination of findings remains important, but even more complicated because of the functional decentralization of the state-supported systems.

- Secondly, new national priorities have emerged in the past few years, notably an emphasis on monitoring the status of education and documenting the country's progress toward the attainment of six national goals.[2] Accordingly, the budget of the National Center for Education Statistics has been substantially increased, and a variety of steps have been taken toward the end of developing indicators of educational progress (National Research Council, 1986).

Most of the developments described above are welcome. State and local departments of education are now very active in the development of their own information and research systems, industry has made a substantial contribution to school improvement (especially in supplying learning technology), and philanthropic and leadership groups (for example, the Carnegie Foundation and the National Governors' Association) have supported or endorsed a variety of school improvement activities. Less welcome, of course, is the ambiguity about the federal role and virtual loss of support for field-initiated research (of which the federal government was and remains the primary source).

Reauthorization and Renewal: What is the Federal Role?

In September 1990, congressional reauthorization of OERI was just a year away. So, with a chance to inform policymakers as they were considering the organization's future, OERI sought an independent, politically neutral assessment of the status of the federal role in education research and development. Toward this end, OERI asked the National Research Council (NRC), the service arm of the National Academy of Sciences, to survey the nation's educational research and development system, to describe its current status and composition, and, finally, to examine the role that OERI has played and, in the future, could play as the principal federal provider. The purpose of the study was to define and suggest an appropriate and effective federal role in the changed research and development system, placing special emphasis on the needs of practitioners and how educational research can constructively speak to them. The study committee appointed by the NRC also sought to develop guidelines that would shelter OERI from political influence and interference. Finally, the committee considered a number of other examples of institutional support for research, both in and out of government, seeking examples of alternative approaches as well as ones that were successful in meeting the needs of the times and their constituents.

The report, titled *Research and Education Reform*, was published in April 1992. Copies were distributed to the participants in the Washington seminar, and its conclusions were the subject of the seminar's first paper (National Research Council, 1992). The report's principal findings and recommendations are reported and discussed by a member of the NRC study committee, Katherine Bick, and the study director, Gregg Jackson, in Chapter 5 of this volume.

Steps Leading Toward the Joint OERI/OECD Seminar

We in the United States tend to think of our problems as unique to this country. We are wrong, of course. Indeed, even casual consideration reveals that virtually every developed country is experiencing social and economic as well as educational problems entirely analogous to those we have observed in the United States. Similarly, we have been sharing concerns about the usefulness of education research and development and struggling to define the appropriate role of federal support. For example, in 1971 Kjell Eide, writing for OECD/CERI, prepared a report on the role of research in the planning of social policy (Eide, 1971). A central

consideration then was whether educational research should provide technological prescriptions or whether it should concentrate on the restatement of problems and the formulation of policy options. Similarly, a volume edited by Torsten Husén and Maurice Kogan in 1984 addressed the problem of how educational research affected policymaking in OECD countries (Husén and Kogan, 1984). The policy issues discussed in Husén and Kogan are the same questions that instigated the preparation of *Research and Education Reform* and that set the agenda for the Washington seminar, as laid out in Chapter 4.

Proposed Meeting

As we anticipated the publication of *Research and Education Reform*, we wondered whether other societies were facing the same problems and whether and how they had been able to cope with them? If the nature and scope of the American educational research and development system has changed in company with a diminution in the federal role, we wondered whether similar or analogous situations exist in other OECD countries and how the various governments have responded to these developments.

Accordingly, we convened an assembly of interested OECD/CERI countries for preliminary discussions of the prospects. While the centerpiece of discussion was the problems and prospects of the American education research and development system, the larger question asked whether the situation observed in the United States was paralleled by similar changes in other parts of the world, and, if so, how the various OECD governments have responded to these developments. There was, in addition, considerable appeal in the idea of comparing the systems and experiences of member countries with an eye to examining the prospects for an international study and comparative analysis.

And so, the Office of Educational Research and Improvement proposed to host jointly with OECD/CERI an assembly of interested countries for preliminary discussions of the prospects. On June 1-2, 1992, representatives from 15 OECD member countries met in Washington, DC, to hear and discuss expert's views on the subject, to share experiences, and to discover whether the topic was of sufficient interest and scope to be further examined by the OECD.

Overview

Eight papers were commissioned by OERI and CERI specifically for the Washington seminar, and they, together with the introductory material prepared by the editors, compose the chapters of this volume. Desmond Nuttall leads off with a discussion of the status of educational research and development in a group of OECD countries. Drawing upon reports prepared by the member countries, Nuttall observes that educational research has become a truly international enterprise, with countries participating in a number of collaborative ventures. Nuttall notes,

however, that while educational research and development is generally of sound health, it ceased to grow after 1985. Moreover, persistent problems serve to reduce the credibility and impact of educational research throughout the world. These problems, which are much discussed throughout the chapters of this volume, are declining educational research budgets, the strain among researchers, teachers and policymakers, and the decline of support for basic research.

Huberman follows with a systematic analysis of issues raised by the participants, all placed in the context of a general survey of system theory and research, and ending with a discussion of a model research and development scheme. Huberman contrasts and explains the several views of the worth and meaning of educational research and development. How does educational research get politicized, what is its purpose, for whom do researchers work, and how "bad" is educational research, are a few of the questions Huberman tries to answer. Throughout his analysis, Huberman makes clear that teachers are, at once, of critical importance as both knowledge developers and users and yet seldom participate as researchers or benefit from research as practitioners.

Bick and Jackson offer their views of the problems that have been outlined earlier in this chapter and that led to the development of their report. They compare educational research and development to that which occurs in other disciplines and identify and discuss the peculiar problems that face education research and development, particularly the political ones. They end their analysis with a summary of their committees' recommendations for improvement of the federal system in the United States, recommendations that were expected to influence the deliberations of the United States Congress during their debate of the federal role in education research.

Van Oijen describes the development and current status of the Dutch educational research and development system. He paints a picture of early growth and high promise followed by substantial disillusionment that parallels the early status of education research in the United States. Unlike the United States, however, support for education research has been sustained and remains a reasonably robust enterprise in Dutch education. Yet even this comparatively positive depiction includes a number of familiar caveats, most prominently that educational research has had comparatively little influence on the development of educational policy. Many reasons are cited for this weakness, including claims that educational research lacked clarity and relevance to policy issues, that it was often politicized, and that it was complex and drawn out and inflexible in its treatment of pressing problems. Nevertheless, the profession appears to have matured and gained strength in the process, and today the Netherlands exerts substantial influence in the growing internationalization of educational research.

The continuous emphasis on the role of teachers in education research and development is extended by Fullan. The research methods and traditions that have been observed and the results that are available suggest that teachers are rarely brought into the picture as either participants or beneficiaries. Nuttall explains the source and the effects of the barriers to more

active participation by teachers, but he holds little hope that improvement will come soon, much less easily. Nevertheless, change must come, since teachers hold the key to educational improvement, and unless they can be enlisted in the effort, education reform will have little effect. All is not lost, however, and Fullan outlines a variety of tasks and strategies that would lead to more active and effective participation by teachers in the production and utilization of knowledge.

Connell repeats the concern that academics are removed from the circumstances of classroom life and consequently their work is of little value or relevance to teachers or the problems they face daily. Connell then moves the discussion into the classroom and offers the idea that teachers themselves are sources of knowledge with immediate application, namely, that which they generate from their experience. Knowledge of this kind offers a degree of practical validity seldom found in studies that aim for wide generalization, but because of its limited utility it is often dismissed as anecdotal or hearsay. Accordingly, Connell urges educational researchers to assist teachers—those at the "chalk face"—in the development of their knowledge and its implications. Connell recommends that practitioners be encouraged and even funded with federal resources to develop their ideas and experience, and suggests that otherwise restrictive research journals be opened to the publication of practitioner wisdom.

Fuhrman continues this line of analysis in her discussion of the barriers that separate researchers from policymakers. She finds that the notable absence of educational policy (or practice) informed by or based upon educational research is due to factors that are much like those that separate teachers from researchers. Generally speaking, policymakers and practitioners do not view the world from the same perspective as researchers. Where policymakers want answers, researchers offer theory and caveats; where policymakers want the means to reach predetermined ends, researchers offer increments of evidence and complex explanations. The net effect is that the two groups simply don't understand each other. Fuhrman offers some tested ideas about the development and utilization of educational policy research that have worked well with policymakers ranging from state governors and legislators to local school board members. These notions travel under the title of "client-based research" and typically involve active participation between researcher and policymaker in setting the agenda and developing and implementing the evidence.

Glennan closed the seminar with an account of his experience as the initial director of the National Institute of Education and how and where things went wrong from the beginning (the first and probably fatal misstep was overpromising the results). He then discusses the issues that face education research and development—credibility, validity and relevance—in the context of a Bush administration reform proposal to create 535 break-the-mold schools. As Glennan sees it, most of the success stories in the systemic reform of schools are a consequence of active mediating institutions that serve as a model for practice and also offer the necessary assistance in the development process. In this light, Glennan concludes his chapter with a discussion of the steps required to construct a collaborative relationship between teachers and researchers (a crucial

first step) and offers a list of recommendations that he thinks will mend and restore the viability of educational research and development in the United States.

Summary

Altogether, this volume offers the experience and thought of several of the world's leading experts on the right and wrong of education research and development, and the design and implementation of new and improved models of research and development systems. Without exception each chapter points to the critical importance of bringing teachers into the research process as participants. As it stands, teachers have few reasons and no incentives to take account of research results in the conduct of their classes; they are not "research literate," nor do they want to be. Bringing them into the fold includes better teacher education about research (without becoming researchers themselves), an emphasis on classroom research with teachers as participants, and enabling (freeing) teachers to bring research-based change to their classroom. The methods by which these results may be obtained are the substance of the several discussions of present research and development systems and the conceptions of improvement, if not perfection, of school assistance programs.

Notes

1. This analysis is based on material from the following sources:

Guthrie, J. (March 1990). *Education R and D's lament (and what to do about it)? Educational Researcher*, 19:2, 26-34.

Kaestle, K. (January-February 1993). The awful reputation of education research. *Educational Researcher*, 22:1, 23-31.

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Sproull, L., Weiner, S., & Wolf, D. (1978). *Organizing an anarchy: Belief, bureaucracy, and politics in the National Institute of Education*. Chicago: University of Chicago Press.

2. On September 28-29, 1989, at the University of Virginia, a national "education summit" meeting was convened by the President and the governors of the 50 states. Shortly thereafter, in his State of the Union address in January 1990, the President announced the formation of six national goals in education. One month later, the conception was endorsed by the National Governors' Association. In essence, the statement advances the idea that by the year 2000, the United States would achieve the following goals:

Goal 1: Readiness for school

All children in America will start school ready to learn.

Goal 2: High school completion

The high school graduation rate will increase to at least 90 percent.

Goal 3: Student achievement and citizenship

American students will leave grades four, eight, and twelve having demonstrated competency in challenging subject matter including English, mathematics, science, history, and geography; and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our modern economy.

Goal 4: Science and mathematics

U.S. students will be first in the world in science and mathematics achievement.

Goal 5: Adult literacy and lifelong learning

Every adult will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.

Goal 6: Safe, disciplined, and drug-free schools

Every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning.

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Chapter 3

TRENDS, ISSUES AND PROBLEMS IN EDUCATIONAL RESEARCH IN A GROUP OF OECD COUNTRIES

by

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This chapter reviews trends, issues and problems in education research in a number of OECD countries. It draws upon country reviews specifically prepared for the Washington seminar, together with personal communications and interviews with key figures in educational research. Given the structure of the seminar, the position of educational research in the United States has, however, not been considered. Most of the chapter's examples are drawn from Australia, the Federal Republic of Germany, the Netherlands and the United Kingdom, for which the country reports prepared for the seminar have been invaluable. The chapter also draws on the country reports for Belgium, Denmark, New Zealand and Sweden.

The Financial State of Educational Research

Concern among governments and their agencies (as well as intergovernmental agencies) for the utility, accountability and cost-effectiveness of research is not limited to the sphere of education. For example, the Australian Research Council has instituted a series of reviews of the state of play in research in major disciplines, education being one of the first to be chosen (Milligan, 1991). Furthermore, the OECD's own recent studies on science and technology, for example, *Research Manpower: Managing Supply and Demand* (OECD, 1989) and *Choosing Priorities in Science and Technology* (OECD, 1991), testify to similar worries. Likewise, the concern among researchers about the level of funding for research and, in many places, about the growing control over their activities is also not limited to the field of educational research.

The evidence is not sufficient to allow a convincing argument that the plight of educational research (and of other social sciences) is significantly worse than the plight of research in other disciplines—though the perception of educational researchers (along with researchers in other social sciences) is that it is indeed worse. Comparisons with other disciplines, especially given their different epistemologies and histories, are not therefore a particularly fruitful way of illuminating the state of educational research.

*Desmond L. Nuttall died on October 24, 1993.

More convincing would be comparisons of the funding of educational research as a proportion of total educational expenditure, but the costs of research funding support is notoriously difficult, and international comparisons doubly difficult. It seems that few OECD countries apply the standard OECD techniques (as laid down in the Frascati Manual, OECD 1992) to calculate the proportion of educational expenditure devoted to educational research and development. Problems arise partly from the difficulty of defining both research and development unambiguously, partly from the difficulties of estimating the cost of the research time of university staff both in education departments and in other departments and institutions of higher education, and partly from the problem of estimating the cost of the time of the growing number of school and college teachers who undertake some research or development as part of their work or as part of their continuing professional studies.

The interim report of the Review Panel conducting the strategic review of research in education in Australia (McGaw *et al.* 1991) estimates that "expenditure on educational research and development was only about 0.35 percent of all outlays on education" (p. 20) in Australia, though it should be noted that Cumming (1980) contended that, at that time, Australia spent a much lower proportion of its education budget on educational research than other developed countries. The 1991 report of America's National Academy of Education (NAE) estimates that the comparable figure for the United States is about 0.5 percent and figures in the Netherlands' submission to the Washington seminar submission suggest that the comparable figure for the Netherlands would be no higher. In 1990/91, the proportion of the Swedish budget devoted to educational research within the National Board of Education was 0.07 percent (Swedish Country Report); even allowing for the many sources of funds for additional research and development that exist in Sweden as in other countries, the figure comparable to those quoted above for the United States and Australia is unlikely to exceed 0.5 percent. With the caveat made above about the possible inappropriateness of cross-disciplinary comparisons, it is nevertheless worth pointing out that in Australia 1.4 percent of total expenditure on health is committed to research and development (McGaw *et al.* 1991); even more striking is the comment of America's National Academy of Education that "many knowledge-producing industries spend anywhere from four to six percent of their operating budgets on research and development" (National Academy of Education, 1991, p. 8).

Another way of looking at the figures is offered by the Federal Republic of Germany. Its country report demonstrates that the share of federal research expenditure allotted to educational research has declined from about two percent in the mid-1970s to less than one percent since 1984. This is consistent with the conclusions of van Oijen (1992), who shows that, based on the analysis of Irvine *et al.* (1990), 0.8 percent of the academic research in the Federal Republic of Germany which came either from government contract research or from research councils in 1987 went to educational research, although a higher proportion (2.6 percent) of the university block grant allocation for research went to educational research. It is also the case that a higher proportion of the university block grant for academic research went to educational research than did the proportion of the contract research and research council expenditures in the

United Kingdom, France and the United States. Only in the Netherlands (of the five countries in van Oijen's comparisons) is the reverse true (3.1 as opposed to 4.8 percent) but, even so, in money terms the university block grant is greater (18 million US dollars as opposed to 9 million for contract research and research council expenditures).

Apart from the figures supplied by the Federal Republic of Germany, financial figures indicating trends over time do not appear to be readily available. Other indicators, such as the number of projects funded or concluded, add something to the picture (though they omit the main element of educational research funding in most countries, namely, the university block grant). These indicators do not paint a uniform picture. As might be expected from the financial figures, the number of reported projects has declined very sharply (by about 60 percent) since the end of the 1970s (in contrast to only a slight decline in all social research) in the Federal Republic of Germany (Country Report). In the French-language community of Belgium, by the end of the 1980s the number of research subsidies were considerably below their 1985 peak though still higher than in the early 1980s (Country Report). In Spain, in contrast, the number of government-financed researches concluded has remained buoyant since 1983 and is at a considerably higher level than in the period 1975 to 1982 (Country Report).

There is also widespread concern that the average duration of projects has declined and that it is increasingly difficult for researchers at academic institutions to secure external funding, something which is viewed as increasingly necessary given the squeezing of funds (or of the unit of resource) in higher education. For example, in Australia most of the Australian Research Council large grants for educational research (defined as those in excess of 15,000 Australian dollars) were only for about one year; moreover, the average grant (both small and large) had declined by over 20 percent (at constant prices) from 1986 to 1991. In the United Kingdom, the proportion of studies judged worthy of support (through the peer review process) that were actually funded by the research councils declined during the 1980s (although there are signs of a slight improvement recently). Nevertheless in the first funding round of 1992, the Economic and Social Research Council (ESRC) was able to support only 47 percent of those proposals judged worthy of support (and, furthermore, was obliged on financial grounds to defer the proposed starting date of many of those it intended to support). It must be recognized, of course, that shortage of funds for research is not the only explanation for the decline in the proportion of good proposals funded. Demand for funding has risen as a result of the expansion of higher education (if not of the time available for conducting research) and the squeezing of the unit of resource.

In summary, though the evidence must be acknowledged to be patchy and comparisons difficult, it seems fair to conclude, first, that the funding available for educational research is low, both in absolute terms and relative to that in other sectors of the economy, and, second, that, if anything, this funding has generally been declining rather than increasing (at constant prices) since about 1980. Part of the reason may be general economic retrenchment in education: UNESCO's first *World Education Report* (UNESCO, 1991) shows that educational expenditure

as a proportion of central government expenditure declined over the same period in OECD countries (p. 38).

Possible Reasons for the Decline

The reasons for the decline in research funding are inevitably complex and reflect the political and economic context. At the risk of oversimplification, then, I offer two main reasons: 1) the perceived failure of educational research to meet the needs of policymakers; and 2) the rise of accountability in education, as in other publicly funded enterprises, with the associated desire for value for money.

Research and policymaking

The relationship between research and policymaking has been widely studied both in education and in social policy more generally (see, for example, Caplan *et al.*, 1975; Carley, 1980; Kallen *et al.*, 1982; Nisbet and Broadfoot, 1980). The chapter by van Oijen (this volume) provides a helpful overview. Some of the frustrations of policymakers—especially those of politicians—are understandable even though researchers might think them to be based on a false expectation of what research can reasonably provide. One of the most obvious frustrations is the time it takes to conduct and report on research, often on a time scale foreign to elected politicians and such that the results arrive after the policy agenda has moved on. This reflects the essentially different motivating force for the researcher and the politician: the pursuit of knowledge verses the desire to change the world. Another frustration is the perceived inability of research to provide simple answers to simple questions: the researcher's answer usually starts "It all depends ...".

The analysis of Caplan *et al.* (1975) offered three kinds of explanatory theory (not mutually exclusive) for the consistent finding of low utilization of research findings (in the social sciences generally) in policymaking. They were:

- Policy-constraint theories: policy is unable to handle the research findings properly;
- Knowledge-specific theories: academic research has its limitations and therefore produces limited findings which cannot automatically be applied; and
- Two-community theories: policymakers and researchers have different cultures, each with its own language, which hinders communication.

It is significant that much more attention has been paid to the relationship between educational research and policymaking at the national, regional and local level (essentially in government) than it has to the relationship between research and practice at the institutional and, above all, the classroom level. McGaw *et al.* (1991) redress the balance somewhat and examine

examples of research on learning and of practitioner action research that have influenced practitioners at least as much as research has influenced policymakers in the other sense (influences on educational participation, and equity issues, for instance). Despite being able to quote positive examples, McGaw *et al.*, would not, however, dissent, I feel, from my conclusion that the utilization of educational research findings among practitioners is no higher than it is among policymakers. Moreover, I surmise that theories about causes would be very similar to those offered by Caplan *et al.* (1975) and quoted above (substituting practice for policy and practitioner for policymaker).

This somewhat negative view should not be taken to imply that research has no real influence on either policy or practice. As Atkinson and Jackson (1992) write: "Educational research has been used far more than is commonly believed" (p. 2). This is echoed—with the addition of nice rider—by a former Minister of Education and Science in the Netherlands, Wim Deetman, in a speech delivered to educational researchers in 1989:

> "To sum up, my second answer to the question as to what role research can perform in support of policy-making is that this role is greater than you probably realize and smaller than you would probably wish" (quoted by van Oijen, this volume).

It is generally accepted that, although the utilization of specific research findings may be low, educational research does have a more general but indirect influence on policymaking through the *Zeitgeist* (Nisbet and Broadfoot, 1980) or enlightenment (Weiss, 1982). Taylor (1985) puts it thus:

> "I have argued elsewhere (Taylor, 1973) that one of the chief functions of research in the social sciences in general, and in education in particular, is to make us aware of the existence and the dimensions of problems, to reveal their interconnections, to rule out some of the more obvious 'solutions,' to add to or refine the concepts we employ to describe and to evaluate phenomena, to indicate which aspects are foreground and which are background—in other words to sensitize us to what might otherwise be ignored, misunderstood or acted upon in blind faith" (p. 65).

The conclusions are in keeping with the views of policy analysts (e.g., Carley, 1980; Greenberger *et al.*, 1976; Hogwood and Gunn, 1984; MacRae, 1985; Nuttall, 1993), who all see only a limited place for research findings even in the most rational of models of the policymaking process. Indeed, rational models have themselves taken something of a knock in the wake of the decline of positivism. Lundgren (1985, p. 218) argues, for example, that:

> "More recently, problems, both social and pedagogical, within the educational system and new perspectives from sociology, combined with financial cut-backs,

> have tended to challenge the positivist assumptions in the traditional Swedish model of research."

The Swedish Country Report points to an analogous change in the research and development model employed. It used to be a linear model "with elements from the problem-solving model, that is to say, basic research leads to applied research leads to development work leads to application" (p. 2). The current model is interactive, seeing research and development influenced by and influencing both the research community, on the one hand, and practitioners and policymakers, on the other, "... that is to say, research is part of the intellectual enterprise of society" (p. 2).

Accountability

Accountability for the use of public funds has tended to lead to greater control of research activities by government, particularly central government since it controls the greatest part of funds for educational research in most OECD countries. For instance, in the United Kingdom, Loder's survey (1992) reveals that central government provided at least 60 percent of the total funding for social scientific research in 1988/89 and local authorities 8 percent, with charitable trusts and foundations contributing a further 16 percent. In Australia, the Commonwealth Government finances around two-thirds of the expenditure on educational research.

The move toward greater control of research activity, and an accentuation of policy-oriented research, was embodied in the customer-contractor principle established in the report on the organization and management of government research and development in the United Kingdom by Lord Rothschild (1971). The customer (that is, government) became much more pro-active in analyzing its research needs and in commissioning contractors (that is, researchers) to undertake defined pieces of research designed to meet those needs. Correspondingly, less research was commissioned in response to researchers' own initiatives. The Research Councils were also affected by the climate of greater accountability, and the Economic and Social Research Council has focused a substantial proportion of its funds on specific initiatives (albeit largely chosen by the research community) in recent years, leaving less available to respond to proposals on themes and topics chosen by research teams and individual researchers.

A similar change in the balance of government-determined and researcher-determined research projects is noticeable in other countries, though often less pronounced than in the United Kingdom. The customer-contractor principle is well-known (though not necessarily under that name) to educational researchers throughout the more developed world.

Responses to These Trends

Despite the changes in the perception of the relationship between research and policymaking and in the degree of control over research activity, it is apparent that many governments and many researchers are still not convinced (largely for different reasons, of course) that the right relationship and balance have yet been struck. The Washington seminar is itself a response to this feeling, not least but certainly not only on the part of the United States, as is the review of roles for the Office of Educational Research and Improvement (Atkinson and Jackson, 1992). Furthermore, a major review has been carried out in Australia (McGaw *et al.*, 1991). Its terms of reference were as follows:

I. *Mapping the present*

1. To define the nature and scope of educational research and to map its boundaries.
2. To identify the current participants in setting the research agenda and in undertaking research.
3. To map current sources of funding and the scope and purpose of the research they support.
4. To identify trends in educational research that emerged in the last decade.

II. *Mapping the short-term future*

1. To identify emerging national and international trends in educational research and the relations between them.
2. To identify existing Australian areas of strength, including work with an international reputation.
3. To identify gaps and areas of need.

III. *Setting the medium- to long-term agenda*

1. To identify for educational research as a discipline:
   (a) what is distinctive;
   (b) what is problematic, in both theoretical and practical terms; and
   (c) whether there are any useful models.
2. To define the content of the medium- to long-term research agenda.
3. To identify principles for setting priorities within the agenda.
4. To suggest priorities within the proposed agenda.
5. To identify options for the organization of educational research, including consideration of:
   (a) the roles and functions of funding agencies, including the Australian Research Council;

(b) the potential value of coordination of funding agencies;
(c) the potential value of any peak body representing the interested organizations and individuals;
(d) strategies for establishing and maintaining international links; and
(e) strategies for maintaining any ongoing review of educational research and for setting future directions and priorities.

IV. *Training of researchers*

1. To identify sources of future educational researchers.
2. To propose training strategies for them.
3. To suggest desirable career structures for them.

A similar review of educational research was undertaken for the Economic and Social Research Council (ESRC) in the United Kingdom. Its terms of reference were as follows:

I. *Overall objectives*

To review the position of research into education in the United Kingdom with a view to increasing the Council's knowledge of the particular problems facing educational research and its development over the next decade.

II. *Specific objectives*

1. Review the policies and priorities of the other major bodies funding research in education in order to identify:
   (a) Current areas of research strengths;
   (b) Areas requiring development, notably in relation to Europe;
   (c) Opportunities for further collaboration on an interdisciplinary basis and with other organizations.
2. Examine the various arrangements for supporting research in education in universities and other higher education institutions including research funding and research training.
3. Suggest ways in which, within current planning horizons, the distinctive contributions of ESRC's various mechanisms for support of research in education might be maximized.

Some of the questions under consideration by the review group were as follows:

1. What is the distinctive role of the ESRC's funding in relation to other bodies supporting research in education?
2. How are future educational researchers to be trained?

3. What are the longer term needs of policymakers and practitioners for research?
4. How are existing research programs to be developed and maintained?
5. What are the United Kingdom's research strengths judged in national and international terms?
6. What are the current concerns of the educational research community?
7. How does educational research relate to other disciplines and what does it share with them?
8. What new areas of expertise need to be developed?

Some additional questions were put forward, including:

1. What does educational research offer to basic and applied fields of study and theoretical and methodological problems?
2. How should we define 'educational research'?
3. How can research findings be effectively disseminated to impact on the education system?
4. How can networks and data bases be set up to enhance cooperation, obviate duplication and promote joint funding?
5. How does the ESRC plan to coordinate research with other European research agencies?
6. How does the ESRC perceive its role—what are its priorities with respect to funding?

Reviews, albeit less formalized, are under way in other countries, such as Sweden and Norway, though for a rather different reason, namely as a result of the change of the loci of responsibilities for education itself (characterized particularly by the devolution of decisionmaking powers to schools). The basic model has changed from steering by resources (until about 1962) to steering by rules (until about 1976) to the current steering by goals (Swedish Country Report; see also Granheim *et al.*, 1990).

One of the responses to the problem of research utilization has been to try to draw the communities of policymakers, practitioners, and researchers together. It is well established in Scotland (United Kingdom Country Report). It is recommended, in the report of the Australian review (McGaw *et al.*, 1991), among other ways, by ensuring that the procedures by which priorities for the national educational research effort are established should be as broadly based as possible. This notion has been brought to a fine art by the Institute for Educational Research (SVO) in the Netherlands:

> "SVO can be compared to a national Science Council on the one hand and to a research contracting agency on the other. The leading principle in SVO's activities is that of the customer-contractor relationship. The main customers are the nation's four schools councils, on which both the school practitioners and the national government are represented ... Most policy and practice oriented research

is carried out by five university-based educational research institutes" (IEA, 1990, p. 4).

The SVO's programming process is highly developed and is worth describing in detail.[1] According to SVO, the following steps are undertaken to establish a research program, or to update the existing research programs on a yearly basis (Lodewijks, 1989, pp. 16-17):

I. *Inventory of research needs*

Annually, all major institutions in educational policy and practice are invited to describe their needs for research. Such descriptions have to include:

1. The actual policy or practice problem which constitutes the context of their research need;
2. The questions that should be answered by the proposed research;
3. The time at which the research outcomes should become available, with a view to their potential use, and an indication of how the results will be used when they become available.

II. *Problem survey*

This step constitutes the heart of the programming matter. One or more experts are invited to carry out a so-called "problem survey" (in Dutch: probleem-verkenning). Their work is supported by SVO bureau staff and coordinated with that of other surveyors. Problem surveys may differ in terms of duration, methods and depth, but they all include:

1. Analysis of the current and expected policy and practice of customers. Mostly this involves interviews with key figures and others who are directly involved or affected;
2. Indication of the scientific state-of-the-art in the area under scrutiny, and a rough sketch of the contribution which can be expected from research to the solution of the policy or practice problems raised. This step usually involves a survey of the (international) literature in Dutch, English, and (to a lesser degree) in German and French;
3. Confrontation of the outcomes of policy analyses with judgments on the scientific feasibility and fruitfulness of research proposals, resulting in a provisional assessment of the proposals put forward during the first (inventory) stage, and the alternatives put forward by the surveyor. In such an assessment the proposals are judged in terms of relevance, scientific backing and feasibility, and the appropriateness of the research problem;

4. Negotiations, if considered desirable, with potential clients to arrive at a final set of research problems, acceptable both to potential clients, the SVO, and the research community;
5. Preparation of a report containing the results of all previous steps undertaken, and description of the activities carried out. This report is a public document, often published in one of SVO's book series, thus enabling potential clients and the public at large and the SVO Board to verify the quality and legitimacy of the research.

III. *Drawing up of SVO research program documents*

The SVO bureau selects a series of proposals for inclusion in the research program for a particular year, predominantly on the basis of financial and other pragmatic criteria, for example, the foreseen availability of required expertise and the links with proposals or projects already under way. The SVO Board (representing researchers and customers from policy and practice) approves or amends the provisional long-term and annual programs, and explicitly deals with the question of whether or not public funds should be allocated. The actual research work can be started when the three steps summarized above have been completed. However, starting up and monitoring the projects is—for pragmatic reasons—also considered part of the programming enterprise. SVO distinguishes the following consecutive steps in this context:

IV. *Research contracting*

SVO invites research institutes to submit concrete plans based on each sketch included in the research program. Such tenders are submitted on standard forms and include an estimate of costs. Independent review committees assess the plans and the SVO bureau adds its findings concerning, among other things, the proposed budget. The Board decides which of the rivalling plans will be accepted for funding. Then a research contract is drawn up between SVO and the institute concerned.

V. *Execution and monitoring*

Most projects last 2 to 3 years. During their execution, progress is monitored by SVO on a quarterly basis.

VI. *Assessment*

Several final reports will be assessed in order to verify their quality, the match between research problem and the actual research steps undertaken, and other issues. These assessments have a feedback function and are also helpful in making dissemination decisions.

VII. *Dissemination*

Preparations start some months before the final report becomes available. Contacts are established between researchers and intended users, school organizations and general support institutes in order to create conditions for the dissemination of the research outcomes.

Other Trends

In his introduction to the *World Yearbook of Education: Research Policy and Practice* (Nisbet and Nisbet, 1985, p. 12), John Nisbet identified three themes that emerged in many of the chapters (which were largely concerned with the state of educational research in each of some 13 nations, all but 3 being OECD members):

1. The remarkable growth in educational research and development in the past 25 years;
2. Increasing centralization and control of research; and
3. New paradigms for research, reflecting changing views on the nature of research and its contribution to policy and practice in education.

As indicated above, the first of these trends has not continued since 1985; rather, the growth has become a decline (though not nearly as steep as the original growth). The second trend has continued, with a vengeance, some might say, at least in the United Kingdom. The third, too, has continued—with educational research becoming more methodologically diverse and eclectic. Qualitative research, in particular, has been accorded greater respect, and studies employing both quantitative and qualitative methods are now common.

Educational action research, especially that conducted by practitioners (see Elliott, 1985), has held its own despite the pressures placed on teachers by the pace and volume of educational reform. It can be expected to increase as a result of the decentralization of educational decisionmaking and responsibility for resources.

I am not convinced, however, that the reasons for the growth of new paradigms offered by Nisbet are the only ones of importance. The squeeze on funds, the information technology and the customer-contractor principle may have also all contributed. The first and, to some extent, the third have led to the decline of the longitudinal study, but mercifully not to its extinction. The second has led to a growth in secondary analysis and meta-analysis. The third has more diverse ramification; for example, the shorter time scales frequently associated with the customer-contractor principle seem to have led to more so-called desk research and less empirical research in the United Kingdom.

Fields and nature of research

It has become commonplace in the United Kingdom that "research follows the money" so the trend toward centralization and control has resulted in something of a change in the educational research agenda, with an increasing emphasis on the investigation and evaluation of educational reforms. It is arguable, however, that the intrinsic interest of these reforms—for example, devolution of responsibility to schools and measurement-driven instruction (or assessment-led curriculum reform) would have stimulated researcher initiative in any case. Learning and teaching remain high on the agenda, reflecting the continuing dominance of the concerns of educational psychology. Educational sociology, the history of education and the philosophy of education seem, however, to have faded in popularity. McGaw *et al.* (1991) provide a detailed analysis of changes during the 1980s in Australia that are not entirely consistent with my more general conclusions.

In their interim review, McGaw *et al.* (1991, p. 62) suggested the following initial priority areas in the national educational research agenda:

1. A focus on learning.
2. Mathematics and science education.
3. Language and literacy.
4. Education, training and work.
5. Organization of educational systems and institutions assessment.
6. Improving professional practice.

This agenda would strike chords in many OECD countries. Moreover, it has a certain timeless quality about it—my own feeling is that it would not have been a contentious list in the United Kingdom in the early 1980s (which is not meant as any disrespect to the Australian list).

One major focus of increasing importance is the quality of education (see, for example, the Danish Country Report), something that is reflected in the program of work of the OECD and its Center for Educational Research and Innovation. It is not clear, though, whether this is more a matter of terminology than of substance. However, the increasing focus on the outcomes of education, in educational indicators systems (and not least in the OECD project or international education indicators) and in school effectiveness research (Bashi and Sass, 1992) is undoubtedly of substance.

If research priorities have not changed much except to adapt to the changing context of education itself, the balance between fundamental or basic research and applied research is generally felt to have changed in favor of the latter. In her analysis of expenditure on social science research in the United Kingdom, Loder (1992) concluded that "broadly basic research accounted for 16 percent of all [social science] research [in 1988/89]" (p. 2), but noted that

"though Government departments provided the most cash overall (£23 million) only two percent of this was supporting broadly basic research" (p. 2).

There is general concern in the educational research community that basic research has suffered, primarily as a result of the introduction of the customer-contractor principle, to the extent that the very health of education as an academic discipline (or field of study) is in jeopardy. There are consequent fears for the future quality of educational research. Only in the Netherlands does there appear to be a clear policy safeguarding basic research. Within the context of the 20 percent of SVO's budget reserved for proposals from research institutions or SVO itself, there are so-called fundamental-strategic research programs. According to SVO (1991, pp. 20-21), there are five current or planned programs (each expected to last about 4 years):

1. Motivation and self-regulation as determinants of achievement;
2. Mother tongue instruction and foreign language learning;
3. Pupil's school careers in the light of societal and in-school determinants whereby these careers are affected;
4. Mental activation as a condition for effective learning, with particular reference to the supportive role of the teacher; and
5. Research into principles in developmental psychology for the education of four- to eight-year-olds.

Research contractors

The bulk of educational research continues to be carried out in universities and other higher education institutions in most countries, and this is generally true also of government research contracts. The German Country Report notes that, since the 1970s, "financial resources available for educational research have been shifted in favor of the research and development institutions directly subordinate to the federal or state administrations" (p. 3) and my own experience would suggest that the same is true in England and Wales.

Another trend noted in both the New Zealand and United Kingdom Country Reports is for the increasing use of private sector consultancy firms. In the United Kingdom, these range from some of the largest management consultancies in the world to an increasing number of one-person and small consultancies.

Both trends seem to reflect the increased centralization and control of educational research. Universities are often slower to react than government institutions and private firms. More significantly, by virtue of their very mission, they are also more concerned with academic freedom, especially with the right to publish the findings of research without undue delay.

The internationalization of educational research

Global trends—political, economic and technological—are promoting the internationalization of educational research. This is especially true within Europe generally and the European Community in particular. Because school education (unlike vocational training) was not an official EC concern until the Treaty of Maastricht, international collaboration in educational research was established more slowly than in many other disciplines (especially science and information technology), but rapid progress is now expected. The first European Conference on Educational Research, held in June 1992 at the University of Twente in Enschede, the Netherlands, was a significant milestone, as was the second such meeting held in Switzerland in 1993. International surveys of student achievements are attracting more country participation than before.

Another sign of the trend is the growing number of reciprocal agreements and ever closer relationships between national educational research associations. The British Educational Research Association, for example, has formal links with the educational research associations in the following countries: India, United States, Australia, Botswana, Canada, Germany, Hong Kong, Lesotho, and Scotland.

Conclusions

Many of the trends identified in this chapter point to a state of good health for educational research, but some of the more significant ones (dwindling funds, a still unsatisfactory relationship between research, policy and practice, and a dearth of basic research) indicate malaise and justify my earlier use of the phrase "the plight of educational research" rather than the more neutral "state of educational research." There are positive signs from most (but not all) OECD countries referred to in this chapter that the malaise is recognized not only by the research community but also by the funders of research, and that some steps are being taken to improve the position.

Nevertheless not very much has changed for the better since 1985, and some changes have been for the worse. Taylor's (1985, p. 66) concluding paragraph captures the sense of the situation:

> "Research in education, as in other scientific, social and applied fields, is virtually open-ended in its capacity to absorb funds—provided that an adequate number of trained research workers are available. There are thousands of topics on which it would be good to have better information based upon careful observation, close documentary study, rigorous conceptual analysis and systematic experiment. The amount that governments and private agencies are willing to spend on such research turns on calculations of benefit based upon political and professional opinion about the possibility of research yielding well-founded information and

judgements about the uses to which such knowledge can be put, and about the likelihood of its being successfully used to achieve desirable ends. Given the contested nature of many educational values, research support is more easily obtained for projects that promise some tangible outcome, such as the validation of a particular teaching technique, or the development and standardization of a useful test, or the measurement of the relative success that different teachers and schools have in achieving their objectives, than for studies of broader and less easily defined problems. This should cause no surprise. It is part of the responsibility of the bodies concerned, however, to ensure that an appropriate balance exists between various kinds of educational research, loosely categorized as policy-oriented, strategic, basic and fundamental, and that a sufficient proportion of available funds is spend in the responsive mode to ensure that new and promising, if unorthodox, proposals-and people—receive consideration and support. If research is merely the handmaiden of current policies, then its potential as a source of knowledge that can be employed for the improvement of educational practice is likely to remain unfulfilled."

Note

1. At the time this report went to the printer, the mandate and organization of the Dutch Foundation for Educational Research (SVO) had come up for review. The Dutch Ministry of Education and Science is considering a number of proposals that, if implemented, in some respect will change the relationship between SVO and The Ministry.

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Chapter 4

THE OERI/CERI SEMINAR ON EDUCATIONAL RESEARCH AND DEVELOPMENT: A SYNTHESIS AND COMMENTARY

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Syntheses of international seminars are easy to do on an actuarial level, simply by rendering the points made by several participants and stringing them together into a comprehensible whole. It is more difficult to step back or hover above the debate and to piece it together more coherently than were the intersections between the different interventions and prepared papers. More difficult in that the coherence is an arbitrary one and that it runs the risk of being overly abstract. Also, participants find it harder to see their own contributions. On the other hand, a good synthesis renders more than the sum of the parts of a seminar and its preparatory papers.

In this synthesis, I shall try to hover above the contributions and to do that from two perspectives. First, the general perspective of "knowledge dissemination and use" (hereafter, D&U) will be the primary lens. This is a fairly well-developed field of inquiry and application, with roughly 75 years of empirical research and conceptualization under its belt. While its pioneers are difficult to trace, globally one can point to two European social scientists whose later careers played out in the United States: Kurt Lewin and Paul Lazarsfeld. From their initial research and applications (one should note that Lewin is the originator of "action research") have come thousands of books and articles, as well as the design of vehicles for carrying research-based knowledge into different realms of practice, including in education. For example, the creation of "intermediate units" (research and development centres, laboratories, documentation centres, computerized information networks) derives from Lazarsfeld's designs for bridging the scholarly and professional communities. Recent reviews of D&U literature tally well over 5,000 publications since 1980. Some of the illustrations that follow come from that body of literature.

This brings us to the second perspective for this synthesis. The D&U field is resolutely international. There are, for example, well-developed centres of research in the Netherlands (Leiden and Twente), in Germany (Bielefeld) and in the United States (University of Pittsburgh, University of Michigan). In fact, although many participants lamented the fact that North American research findings seem overly influential in the debate over educational policy and practice, it is noteworthy that beneath most of those finds lurk conceptualizations from Western

Europe. For example, just to take the D&U field itself, the strands of what is called a socio-technical approach are informed largely by British and Dutch conceptualizations, and the strands of conflict theory or critical theory come directly from the Frankfurt School in Germany. By the same token, much recent D&U work in the field of education was initiated or coordinated between 1975 and 1985 by the Center for Educational Research and Innovation (CERI) of the OECD. In large part, the continuing "internationalization" of work bridging research and practice in education has been facilitated by CERI initiatives.

So the D&U perspective, with an international focus, will be used to integrate, to the extent possible, the sense of the discussions and papers. In a few cases, a specific contribution will be identified. Generally, however, this chapter will hover over the individual contributions, while staying faithful to the themes of the seminar.

Enlarging the Scope of Research

The "two communities" problem. Many participants, and above all the ministerial delegates, lamented the apparent lethargy and fussiness that characterize the educational research establishment. Findings are slow in coming, costly to produce, seem often unintelligible and have so many qualifiers ("on the one hand ... on the other hand") that policymakers wonder why they should finance such a paper mill. Or so it seems.

This is a classic finding in the field. The universes of research and of practice seem to march to different drummers. The researchers appear to be propositional, working systematically across specific instances to find general principles. A minister or central office administrator or school director wants more situational knowledge—knowledge to frame a specific policy, to consider alternatives, to make a specific choice, to buttress an argument and, above all, to solve a problem. None of these contingencies can wait around until researchers analyze their data, make up their minds and write down their conclusions in readable prose. Several interventions alluded to that dilemma.

Other interventions and papers took the side of the researchers. Good educational research is conceptually grounded, methodologically clean, rigorously analyzed, very carefully interpreted. If not, conclusions are meaningless or misleading. If these conclusions are to frame a statewide policy or solve a complex problem, they have to mirror the complexity of the problem field they are addressing. This takes time, care and freedom from having to produce immediate results.

It is worth pointing out here that each party is being careful in different places. Before trying to move an educational policy through a legislative forum, ministers will line up their support carefully. They will ponder at length over wordings, over timings, over likely responses of the opposition. They may have numerous phone calls and carefully orchestrated meetings,

both formal and informal ones. The research findings, in fact, are part of that strategy, and not necessarily a crucial part. In other words, the policy arena has its own versions of careful design, analysis, interpretation and action, but these have more to do with making a situation turn out right than with understanding its core parameters.

In that sense, one could say that the minister is something of an action researcher, much as a clinician or engineer or mechanic is. The sequence is: diagnose--> test--> analyze--> act. The conventional research sequence is different: design--> study--> analyze--> conclude. The difference lies in the kind of reality-testing that goes on and in the canons for knowing whether one has proceeded intelligently.

A possible solution. There is a way out of this dilemma; several participants alluded to it indirectly. The way out has to do with a widening of what is meant by research. If a minister or director of secondary education is poised to make a decision on extending a new history curriculum from 15 experimental schools to an entire region, there may well be a piece of research on the experimental schools, probably in comparison to a control group. The decision, however, may—probably will—need to be taken before that study is completed. If the researcher in question says, "I'm sorry, Madame, I can't make a specific recommendation until my study is done," that researcher will be dealt out of the game. And perhaps dealt out of future games as well.

Let us assume the researcher says this instead: "As you know, my study isn't done. But we do have a lot of indicative data already. You can have it in writing or in person. Just understand, Madame, that it is partial and that a careful analysis might not corroborate it." The point here is that research knowledge which is meant to guide policy or practice—which is only a segment of the knowledge base that is available—can come in different forms and at different moments. It represents the highest level of information the researcher has at the moment at which advice is called for. In the best cases, the researcher has 3 years to prepare that advice. Sometimes, however, there are only 3 months. Or 3 weeks. Or 3 days.

In 3 days, a researcher can actually do quite a bit: review the data set, re-review other studies in comparable contexts, contact 2-3 specialists in other regions, get hold of a meta-analysis of recent empirical work. The level of knowledge represented by the researcher may then be higher, at least from a scientific viewpoint, than what the Minister gets from other sources. In any case—and this was brought home by several participants—the minister will decide, not the researcher. Moreover, that decision will have to include political or economic desiderata along with more scientific ones. Research-based knowledge is only one piece, and not necessarily the most important piece, of the context in which the minister, as well as other school professionals are operating.

A concrete example. In fact, if we are after the most powerful information a senior administrator might need, even in terms of its validity and reliability, research in D&U would suggest that it would be a mixture of expertise. Relying on that research, this author has organized half-day or evening sessions by collecting around the minister what appeared to be the *most useful collection of high-level information:* the researcher mentioned earlier, the developer of the history curriculum, the directors of two experimental schools, the teachers' association delegate who had followed the experimental curriculum, and one each of both the experimental and conventional history teachers.

Individually, each person around the table would have a partial perspective on the problem and a preference for or against extension of the curriculum. Collectively, however, they represent a particularly knowledgeable set of informants: close to the locus of decision, informed about both sets of schools, specialized in the history curriculum, combining scientific and practical perspectives, having reasoned arguments both for and against. They also have some close-hand knowledge of local sites that might shake even the most serene of administrators.

No research centre could put together this level of information and expertise in one study. By the same token, the likely source of counsel, the secondary education directorate, could not compete in terms of warranted knowledge and expertise. The research centre, in fact, could, however, also see its role as one of brokering such an interaction by pulling together such a panel of informants.

Moreover, we often forget the importance of the vehicle in which research knowledge is carried beyond the scientific community. As many studies (of information use, of social persuasion) have shown, knowledge embodied in small type filling a page, accompanied by sometimes abstruse graphs and tables, is no way to attract a reader's attention, unless that reader is a fellow researcher. On the other hand, information transmitted in person, with a give and take on both sides, accompanied by simple graphs, several concrete examples and some humor, works well—even within the scientific community.

These studies show clearly that specialist information is usually no match for anecdotal, vivid information in terms of its impact on the reader or listener. They also underline the fact, mentioned in the discussions, that researchers are often competing for attention with other sources of influence that use more anecdotal or experiential data. These data may be—usually are—biased and unreliable, but they seem to be weighted more heavily and remembered longer and better by listeners.

This may account in part for the striking finding in the D&U field that valid pieces of research do not diffuse any better than flawed ones. This is even the case sometimes within the research community. It suggests that the "medium" is as important as the "message," if one is interested in being read or listened to by other people than by one's immediate peers.

It is here, as several participants pointed out, that the educational research community might take some cues from marketing, public relations, advertising or opinion polling. Others responded, with reason, that research findings are invariably distorted if too much attention goes to the medium and not to the meaning. It is true enough, however, that educational researchers are learning to present their findings in more attractive guises (color, large print, simpler tables, short executive reports and simply-written conclusions and recommendations), without complaining any more than before about distortions on the part of non-specialists. It is also true that senior administrators are getting more sophisticated in understanding and using technical reports and research findings.

Going Beyond the Research Findings

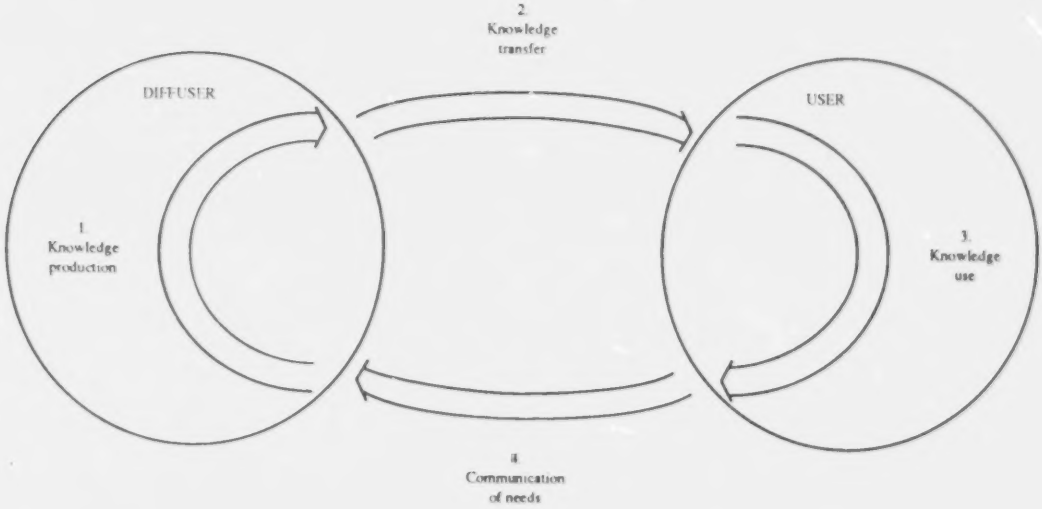
Some discussion during the seminar centered on the usefulness of research findings for orienting policy and practice. To what extent can a given study resolve an issue unequivocally? For the researcher, of course, no study does that. Research is a slow, uneven, cumulative venture. Each study stands on the shoulders of the preceding one. Research knowledge comes in a series, not in any one, definitive set of findings. This is all the more so in a field such as education, where the context is changing continuously, and today's priorities (cultural diversity, adult literacy, higher level cognition) are largely new ones.

In that sense, the *use* of research is not a priority for those researchers whose aim is to build a foundation of knowledge. They are right to point out that the knowledge base for, let us say, higher level cognition needs to be there for others to draw on. If all the energy goes to applying the existing knowledge, the well will dry up quickly. More applied researchers, bridging the gap between theory and everyday practice, need a trustworthy base to carry into school settings. As a few participants repeatedly observed in the discussions, "applied researchers" or "action researchers" assume there is a valid body of literature to draw on in conducting their interactions with practitioners. But who will generate or renew that body?

One way of looking at this issue is with the help of Figure 1. The figure is an extreme simplification of a far more complex process, but it can still be useful. Figure 1 shows both the conventional process (1--> 2--> 3) through which research knowledge comes to professionals, and the more recent, or "need-driven" process (3--> 4--> 1). several participants and several papers called for some equilibrium between the two, for some of the reasons mentioned above. Clearly, if all research is need-driven, there will soon be little knowledge produced that goes beyond specific issues. One will have to look elsewhere (in sociology, in psychology, in linguistics and mathematics, etc.) for that knowledge, but it will not have addressed educational settings. This is more problematic than it may seem.

On the other hand, research enterprises that have no or faulty vehicles for reaching users, or that are unresponsive to problems posed in terms of needs or priorities, are not likely to be funded for long—except by the same agencies that fund fundamental research. While it is hard to say, this may account for what became a real issue at the seminar: The different levels of funding for educational research in OECD member countries, and the trends toward greater or lesser funding in recent years. Some participants interpreted the trends to say that some countries had become disenchanted with educational research, while others still had high expectations. While one can't correlate levels of enchantment with levels of funding, it is useful to take a hard look at each of the four variables in Figure 1 and to assess the viability of the enterprise from that perspective. In effect, when all four components work well, educational research should be both rigorous and responsive.

Figure 1—**Relationship between diffuser and user**



Before moving on, note that the model in Figure 1 seems to be saying that educational users are consumers more than they are parties to the exchange and that they themselves do not produce worthwhile knowledge. The model does not, in fact, say this; knowledge production, for example, should be, and often is, informed by reflective practice. But this issue cannot be glossed over. There is a real question here, as we shall see later, of who, exactly, sets the research agenda; whose problems are being studied and who is defining their nature?

More generally, these dichotomies (basic and applied, researchers and practitioners) are convenient but not always helpful. Many educators operate in the intersections, or combine two roles. Also, by dichotomizing the parties concerned, it becomes harder to conceptualize them

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together, in a collectivity or community. One clear message from this seminar was that, without such "collectives" combining researchers with different actors at local levels, there was little chance of doing better than incrementally at solving educational problems.

In effect, even in a conventional dissemination of findings, basic researchers who take their data or conclusions to the scientific community find themselves drawn quickly beyond the scope of their study. No study will answer most of the questions posed in a specific setting. For example, any study on interculturalism will only address some of the facets of how classroom life is understood or perceived by pupils of varying cultures and social classes.

As a result, those researchers who engage with teachers or administrators around their study can expect to draw on more knowledge than what is in a specific study, including background knowledge or information they are not certain of. The first questions may be "how do you account for the pupils of X ethnic group in our schools who ..." when only part of the data set addresses those pupils.

Researchers can—often do—choose to play it safe, saying that they cannot address that issue. In several interventions, this was lamented. Or they can go beyond the study and address the question with data from another study, from one of their previous studies or from their general knowledge of the topic. In the D&U field, there is evidence that when researchers do go beyond the study at hand, especially in an interactive mode, the findings of their study are better understood and more likely to be applied to future situations faced by practitioners. This finding is similar to that found in program evaluation work, where evaluators are more successful when they act as educators around their findings than when they work in a more didactic mode within their findings. One reason for this is that each party has equal status in the ensuing conversation, whereas the didactic mode sets up an unspoken status hierarchy which can create defensiveness on both sides.

Distortion and Strategic Use of Research

There also seem to be fewer problems of distortion in a more educative role on the part of researchers. This problem was raised often in the discussions and alluded to in two of the papers, and it is not as simple as it first appears. What research we have on this issue makes some interesting points. First, there is greater distortion when findings are communicated in print only and when this represents the only exposure of readers to the findings. When, on the other hand, there are several points of contact or several media (print, in person, visual), distortion abates. In particular, when consumers of a given study are engaged with it over a longer time frame, which is seldom the case, levels of understanding are substantially higher. What they gain in the over-time exposure to a study is the time required for actually learning about the substance and import of a study or a research program. Were the researchers to understand another study

in a slightly different field in the time required for most non-specialists to understand theirs, we would very likely have high distortion of the findings among these researchers.

Another intriguing finding: when researchers and practitioners interact during the life of a study, not only is understanding higher, but there is a greater likelihood for these practitioners to consult other research. There is also a greater likelihood for researchers to increase the dissemination component in their following study. What seems to be happening here is that each side has overcome its stereotype of the other, has found the cohabitation profitable and has learned that reflections on one's experience are empowered by conceptual clarity, and vice versa. This is notably the case when researchers stay with practitioners after the study, when findings are brought directly into practical settings. More on this point below.

One could even say that researchers get the distortion they deserve. If a set of studies are handed off in a publication, even a vulgarized or popular one, the findings are at the mercy of the readers' background, beliefs, concerns at the moment, interests, intentions. None of this can be corrected or pursued. If, on the other hand, there are other contacts, or if the researchers have worked a bit with an intermediary (journalist, consultant, trainer), chances of a better understanding are heightened. This does not mean that the research community must do all the work of clarifying the findings, contextualizing them, and seeing how they are interpreted, but that it should see to it that someone does that part of the transfer.

Two more points here. First, distortion is largely a function of the representations people bring to the findings or conclusions. If, let us say, directors of elementary education ask for and get a study of the relative merits of whole language or phonic approaches to reading, the only way for many to access that material is through the representations they already have. In most cases, these will be simplified ones, perhaps distorted ones; it is probably not a topic many of them have read about, reflected upon, worked with over the years. As a result, the first exposure will reflect their current level of knowledgeability. The same would hold for many of the researchers involved, if the study were about planning, budgets or the deployment of staff, with alternative scenarios. The key here, as much for researchers as for teachers, would seem to be not to wring ones hands but to work with the people concerned at their initial level of understanding and to bring them, if that is appropriate, to a more differentiated or integrated level of mastery. In doing that, one might learn a thing or two oneself.

The second point, which was also raised in the course of the discussions, has to do with thinking of research use as understanding and the notion of following up on a set of findings. As studies of policymakers have shown, research findings enter a field in which a minister or senior administrator are scanning for some useful ideas or tools or arguments. The findings may get crowded out by more immediate concerns, or by another line of action. Or they may be unreadable. Alternatively, they may coincide with other things administrators are thinking about. In that case, research-based knowledge may enter into the mix because the timing or the message

was right. In still other cases, this knowledge may be held in abeyance but could seep down gradually as new ways of thinking about the problem brought administrators back to this line of inquiry. This phenomenon of "knowledge percolation" has a slow-working but cumulative effect. But that effect will typically not take place if the rest of the field surrounding the actor is not receptive to it.

When, in fact, research-based knowledge is used to frame or guide educational practice, its derivation disappears. People then may talk of "formative assessment" or "cooperative learning" or "situated cognition" as if they were always part of the conceptual landscape. In other words, as noted by van Oijen in Chapter 6, educational research may well be used far more than is believed, although less than one might have hoped. When that use is indirect, time-lagged, assimilated in taken-for-granted ways, the research community does not receive the acknowledgment it hungers for. On the other hand, it becomes easier to introduce new work and to collaborate with professionals on issues framed in these new perspectives.

A final remark on distortion. In many interventions, distortion became an issue when research findings were used as ammunition for a political or administrative argument. First, there is a distinction between ammunition which represents fairly well the conclusions of a study and ammunition that misrepresents them. Very often, observers of this case, including the researchers concerned, feel that interpretations that go against the grain of their own convictions is a misrepresentation, while those sharing their own views are legitimate ones, if a bit simplistic.

This phenomenon is known as "strategic use" of knowledge. When distortions occur here, they are often due to a less deliberate, perceptual process of selectively seeing in a study the points that one wants or expects to see, and of not seeing or explaining away the discrepancies. For example, research in the D&U tradition has been done with people holding strong opinions, let us say, about capital punishment. Some think it is a dissuasive measure and is justifiable for some crimes; others feel it is inhumane and does not deter criminals. If a study given to both groups has as much data to support one opinion as to support the opposite one—and many real studies are like this—each side will read the study as supporting its opinion. Evidence to the contrary will be explained away ("secondary" ... "an exception that proves the rule" ... "not enough data there"). In fact, the content of the report will have to reach about 70-80 percent of information going against the viewpoint of the reader before that reader becomes aware of the discrepant information.

This might be an amusing finding if it were not so important for educational research. For example, many evaluation reports are very much like the example just given. There are often as many good reasons for choosing one curriculum as another, for deciding to go ahead with an experiment as to stop it, for interpreting the results of achievement tests in one pattern or another. In these cases, those who make the decision may well see the data in one light rather than

another, without voluntarily misrepresenting the findings. If there is voluntary misrepresentation, then the research team has to decide how it can intervene. That intervention, of course, draws the scientists into the public arena. It might have been wiser to have tried for a few exchanges with the decisionmakers over the import of the findings before things went that far. This, in fact, would have been a logical dissemination strategy.

Finally, it is worth noting that practitioners are not the only ones to avoid seeing data that do not go along with their predilections. Researchers, including some of the greatest ones, have been very slow to recognize the flaws, anomalies, contingencies in their work—despite the canons of the scientific method. Our Galileos, Newtons, Priestlys, Piagets did not abandon or qualify their theories in the face of justifiably refuting evidence.

For Whom Do Educational Researchers Work?

It was fascinating to see this discussion play out at the seminar. Without exaggerating, it would seem that the Europeans are far more sensitive to, and concerned about, this issue than are the North Americans. In effect, the sociology of knowledge is a strong European tradition, from Gramsci to Habermas to Bourdieu. It has had less influence elsewhere.

The issue was sometimes put brutally. The gist was this: researchers, especially those who work for federal, regional or state-level centers, are often hostage to their institutions. They cannot produce objective, detached findings. If they do, and those findings are politically inconvenient, they will be ignored. If they don't, they are essentially agents of the government, and they are making social science subservient to political desiderata. In any case, by working mainly on priorities set at a political level, researchers come to be handmaidens of the authorities who finance their work. It is difficult to test this theory empirically. There has been some research on evaluation findings, showing that evaluations conducted by centres internal to the school system under study were considerably more favorable than evaluations done by external centres. This lends credence to some of the arguments just mentioned.

On the other hand, most administrators around the table did not feel that their research centres were anywhere so submissive. On the contrary: many studies seemed to come out opposing or criticizing government initiatives—without any firing of personnel. It was even difficult to keep researchers on track, without their wandering off into conceptual tributaries or into lines of inquiry of interest to them but not to those who intended to use their findings. In other words, if researchers are hostages, they are seldom pliant, or even predictable, ones.

Also, as one participant noted, research is often the lever with which one introduces new ideas in an educational system—ones that go against the grain. In effect, a research service is often the only place for legitimate heresy: where ongoing practices are questioned, where new trends are brought to the attention of local actors, where alternatives to the policies in force are

discussed openly, where the most obvious or current solutions are criticized, where fashionable theories are debunked. These heresies may be more timid ones than were they to come from a university, for clearly there are fewer degrees of freedom. In exchange, these ideas have a better chance of being taken up within the educational establishment.

In any case, no one put into question the potential usefulness of a research function, either one nested within a ministry or state administration, or set within an university structure. To be sure, research has historically been one of the few sectors which is not caught up fully with the day-to-day management of schooling. It provides slack for the administration to study itself, look for alternatives, follow new ventures closely. Without that slack, there would be no scanning or monitoring device within the machinery.

There has, however, been some finer grained work indicating that one of the nagging doubts that some senior administrators harbor about researchers is precisely the idea that some, including those in their own research centres, seem to be in the opposition, although never clearly so. This may be because researchers have a different occupational socialization from teachers or administrators, or because they define their role more as one of keeping the establishment honest. Where criticism is more impersonal in a scientific arena—it allows for alternative or competing ideas to be aired and assessed—criticism in a school system is often critical of a service, a school or a category of personnel. Small wonder, then, that it is taken personally or seen as inconvenient when critical pieces appear in the press.

Or it may be that, as administrations change, many people in research centers are in the opposition. In any case, there are documented instances in which decisionmakers ignore the advice of their research service in favor of advice from less objective or less knowledgeable sources that they appear to trust more, or whose counsel is easier to understand and weigh. These sources, one should add right away, can also be critical and outspoken, but they have some important characteristics: they are close at hand, they are trusted, they respond quickly, they give a variety of options, they have a deeper understanding of the context, they know how to answer questions, they know what matters to the person or service they are advising. On the other hand, research services ought to be able to do these things as well. In fact, the evidence is fairly clear here: research centres with these characteristics tend to be consulted far more often, and when they do, they also appear to find it easier to get support for more fundamental research, even for work with a more controversial edge.

From the discussions it would seem that countries have different thresholds of interest in, even tolerance for, research that is openly critical or ideologically opposed to current policies ("Let it stir up the system"). Also, these thresholds are not constant from one government to another. In a few cases, there were even signs of seeking out, or at least welcoming, controversial work, especially if it could serve as a critical mirror or as an early warning system

of new perspectives to take into account for policy purposes. These differences appear to be more cultural in some settings and more political in others. But we can expect this tension to continue in practically every setting where those in charge feel that too much research is focused on the questions academics want to answer rather than on the decisions which officials need to make.

The Status of Educational Research

It is hard to disentangle the different points made on this topic. At some moments, there were laments over the lower status of the field, both in scientific terms and terms of its influence in political councils where research is funded. It does appear that educational research is underfunded in most or all Member countries, compared to such areas as health and welfare. Other commentators, however, argued that:

- Much had to do with the maturity of the field; such applied fields as medicine, engineering and law had traversed the same identity crises;
- Educational researchers had made out well in competitive funding for scarcer resources. Some of this, however, may have been the effect of other social scientists' presenting their proposals in education rather than in their own fields;
- Education continues to be a high priority in all Member countries, even if the research budgets remain modest. Some of this is due to debates over what kinds of research are appropriate; and
- There is probably as much rotten research in physics and biomedicine as in education.

These claims are difficult to weigh, but they do clarify the debate somewhat. It is nearly impossible to assess the impact of educational research on policy and practice, and not easy to decide whether a given researcher is an historian or an educational historian. In one presentation, the claim was made convincingly that discernible progress had been made in some areas of research, among these, factors associated with the diagnosis, assessment and improvement of learning, in understanding the social organization of schools, and in the nature and impact of pedagogy. On the other hand, there seemed to be a deep malaise in some settings about the educational system: that its problems were too multiple and too extrinsically determined to be solved by increasing the amount or by changing the type of research.

European and North American Contexts for Conducting Research

There are notable and at times fascinating differences between Member countries in the ways in which they organize and support enterprises as apparently common as the conduct of educational research. The American system appears to have important strengths, which impressed several other countries. For example, the absolute level of funding for educational research and development is impressive, although less so now than 15 years ago. The

multiplicity of training and research centers, the variety of methodologies, the capacity to mobilize large communities of research and practice around significant issues, the sheer bulk of knowledge produced, the sophistication of the research infrastructure in the larger centers, the documentation facilities and networks, the intermediate agencies spanning universities and school systems: there appears to be no counterpart elsewhere. Many English-speaking Europeans seem literally overwhelmed by such colossal congresses as those organized by the American Educational Research Association (AERA), with 7,000 participants and 2,000 presentations of one type or another.

There were, however, several warnings, already noted, that North American research was becoming hegemonic, that is, its conceptual frameworks, methodologies, areas of focus were dominating the research agendas in other countries. But it is worth noting here, once again, that many of these frames and methodologies derive from fairly recent European sources. The irony here, as one participant pointed out, is that European research is now being rediscovered or simply legitimated as Europeans read about it in North American publications.

Obviously, the quantity of resources and personnel is roughly proportionate to the size and wealth of the country, and does not ensure in itself higher quality work, smoother flows of knowledge between the center and the periphery, nor greater impact at the locus of application. It does, however, provide the makings of a powerful infrastructure for doing all these things, provided all the parts mesh correctly. In no country, however, is this the case, notably in the social sector. Making a success of social engineering seems to have eluded almost everyone and not have tempted some.

In other words, to European eyes, each sector of the research enterprise in North America, from needs assessment and basic research to "delivery" or "exchange" mechanisms at local levels, seems to have its specialized functions and personnel, whereas in many European contexts, one or two modestly staffed services perform all the functions. Whether this is an intelligent construction—whether, for example, labor can be divided this way in the conduits leading from research to local initiatives and applications—is an obvious question. Many European participants, however, seemed to prefer having this problem to resolve than to contend with a far less elaborate infrastructure for doing roughly the same things.

The seminar was an opportunity to look beneath the surface of the American infrastructure, most notably through the recent report of the National Academy of Sciences. The report focused more on the dilemmas than the achievements:

- Lack of stability in leadership and operations at the ministry level;
- Short attention spans: rapid changes of priorities, leaving existing programs stranded; too little time for needed cycles of research, development, testing and refinement;

complex and demanding, which then feeds the discontinuation of the programme. This is, as one participant put it, like ripping up a tender plant; and

- Oversensitivity both to shorter term political interests and to "the next great hope," which tends to be abandoned after a sizable investment in favor of the new next great hope.

There may have been some devilish satisfaction here on the part of some non-American participants. Despite such an apparently affluent infrastructure, coupled with a scientific hegemony, the criticism of the National Academy of Sciences report is biting, with few qualifications. This is not to say, of course, that critical reports could not have been written about any or all of the national research systems represented around the table.

How do the European research enterprises compare on these same dimensions? Some generalizations might be warranted. Clearly, the attention span in most countries is far longer, which is crucial for the cycles of research, development and local experimentation to play out and be assessed. Even from one government to another, the priorities tend not to waver mightily. This means, very simply, fewer wasted resources, and less fickleness. On the other hand, it may also mean that not as much is expected of the research and development enterprise in the first place, beyond conceptual clarification and analyses of the main problem areas. It was pointed out, for example, that research policies in many European countries are more laissez-faire, that is, less targeted, less demanding, less constraining of research teams.

This has obvious merit. But it also means that national or regional priorities—assuming they are legitimate and shared ones—may or may not be addressed by scientific researchers dipping into funds for applied research, in addition to the funds they can access for basic research. Similarly, as noted by a European ministerial advisor, there is virtually no quality control nor any qualitative evaluation of utility or impact. It may be the case that education officials in some European countries have less experience with large, problem-oriented research programs, and are culturally more wary of stepping on the toes of university faculty. The North American relationship seems to be more businesslike or contractual—for better or worse. And of course, there is a market there; several universities, research centers, even private firms may be competing against one another.

One final point is worth considering. Many Europeans were struck by the network of intermediate organizations in the American landscape, notably its thematic research centers and its regional educational laboratories. On the face of it, at least, the centers allow for continuous work on a priority area and bridge the path from basic research to applied work. The labs would then be a conduit for that knowledge base but, at the same time, would have links with local school systems facilitating the match between local needs and regional knowledge resources. The labs would even speak for the concerns particular to communities, teacher groups and local

officials in their region. Several European participants were caught up in the process of creating the same or a similar infrastructure. A few, notably the Dutch and Germans, were well advanced in their versions of these bridging mechanisms.

The question here seems to be the relative usefulness of each link in the chain, when resources are scarce. Can universities or other research facilities do the same job as theme-oriented centres, at less overall expense? Can other hook-ups between local sites and sources of knowledge resources suffice, without an intermediate, regional laboratory? Do these intermediate agencies siphon off funds that would have otherwise gone to research, or are their functions distinct, their constituencies different, their funding of a different nature? By multiplying intermediate units, do these units take on a life of their own? These are all legitimate questions. On the face of it, at least, the creation of these bridging mechanisms responded to an absence in the chain, and, in the case of the laboratories, to a greater concern for regional and local priorities. By taking out these links, there is no evidence that the research-practice enterprise would prosper any more than it did before it was amended.

Peripheries and Centers: Designing the Bones of the System

Throughout the discussions—but less reflected in the papers—were three intertwined debates around a common theme. Since that theme is raging throughout the educational research and development community in North America, Europe and Asia, it is no surprise to see it surface here.

At its baldest, the theme has to do with power and its legitimacy. At the first level of debate, the question is this: "Who defines the research agenda for whom?" Then comes the next debate, through a subordinate question: "Where is the proper locus for defining priorities and framing the research?" And then at the next level, another subordinate question: "Who decides what constitutes valid research knowledge, and on what grounds?"

It would take too long to tease the various strands apart, whether at the seminar or with a more conceptual comb. At the same time, while the debate may sound academic and woolly to newcomers, it gets very concrete when it is framed in the form of fairly naked questions. Also, the stances taken by different parties determine how each will construe the relationship between theory and practice.

It is only recently, in fact, that issues were framed in such a contentious way. Until then, the answers seemed fairly simple:

- The scientific community defines the agenda in function of gaps in the knowledge base and (but not always) of priorities set by political officials who weigh and filter

local needs to find common themes.

- The locus depends on a match between national and regional needs.
- The social scientific community decides on the criteria for valid research knowledge, using the canons derived from physical and experimental science.

The seminar was a reflection of how these answers are no longer seen as obvious ones, nor even necessarily legitimate ones. First, there seems to be a ground swell of revolt against centralized definitions of priorities, needs and research programs. The periphery is claiming its rights, and no longer accepts that the locus of debate and definition be continually elsewhere and in forms it does not acknowledge. This appears also to reflect dissatisfaction with top-down, or center-out mechanisms for setting policy, conducting research and reforming practice. This has led to some decentralization of research programs where they were centralized, and to further devolution, often in the form of field-initiated research—where this was already the case.

Now for a second piece of the puzzle: in the professional community, but also among some researchers, there is discontent with other loci of inquiry than the classroom or intra-classroom level. The idea here is that the core activities of learning, growth and development go on here, so empirical research should start here or, if not, should bring other inquiry to bear on this level. In fewer cases, the locus is set at the school-building level, and the same arguments are made.

Then the third piece: human sciences are fundamentally different from the others, and different in ways that make canons of validity, reliability or proof far more relative. Who is then to say that a teacher's theory of learning in her classroom is less valid than a researcher's? It may even be more powerful. After all, the teacher is closer to the locus of activity than the researcher, who doesn't work with children at all, or at least not in naturalistic settings.

When these three arguments come together, they make for a localist, relativist model of research: one where the priorities can best be decided as a function of the setting, and where the aim of research is to reorient practice in ways that translate directly into enhanced instruction and learning. At the same time, researchers work in communities with groups of practitioners on problems which these professionals design. In the best cases, these are meaningful issues for teachers and researchable ones for social scientists.

There are doubtless some sensible, defensible arguments here—arguments which have always existed but which have not had as much political or scientific clout as now. Were this the unique vision, however, there would be no knowledge to be drawn on or exchanged beyond that which was locally generated. As it happens, the knowledge base in the areas of cognition and learning is especially strong. It seems to make little sense to ignore it or to reinvent it. More accurately, the propositional knowledge base is strong, and the situational knowledge base needs to be supplied locally. To say that all educational knowledge is purely situational (relative,

local, only meaningful or intelligible in particular settings) is to take a line of argument over the edge. Similarly, to infer that all one needs to know can be found or invented on the spot is disingenuous. There are limits, as one participant put it, to self-bootstrapping.

It is curious enough to debate these questions in a seminar with senior officials and heads of, or advisors to, national and regional research centres. For most of these people, a fully relativist, action-oriented, centrifugal research enterprise would mean dismantling not only their services but also their perspectives. Another danger was signaled: for some ministers, the idea of fully decentralizing the research infrastructure may actually have some appeal. The idea has political rewards—a demonstration of responsiveness to local concerns. It comes in far cheaper than the development of an elaborate infrastructure. It makes for one less political hot potato. It puts the burden of dealing with complicated arrangements and complicated academic types on someone else. Also, to a non-initiate it could make good sense that, if the real problems are at the school and classroom level, the funding and the decisions on how best to use it should go to the people who operate there, along with those researchers who want to collaborate with them.

The implicit consensus was that there is no difficulty in subsidizing both basic research and field research; one did not cancel out the other, and each was a necessary part of the cycle of knowledge production and use. The political and epistemological tensions have always been there, with swings of the pendulum toward one or the other as a function of the times. They may even be inherently healthy as correctives for either extreme: the "engineering" approach to research and practice or the "spontaneist" approach. The burden on both sides is to show that their perspective actually produces warranted knowledge that demonstrably guides enlightened practice, and does it in ways that are directly or indirectly tied to increments in instruction and learning.

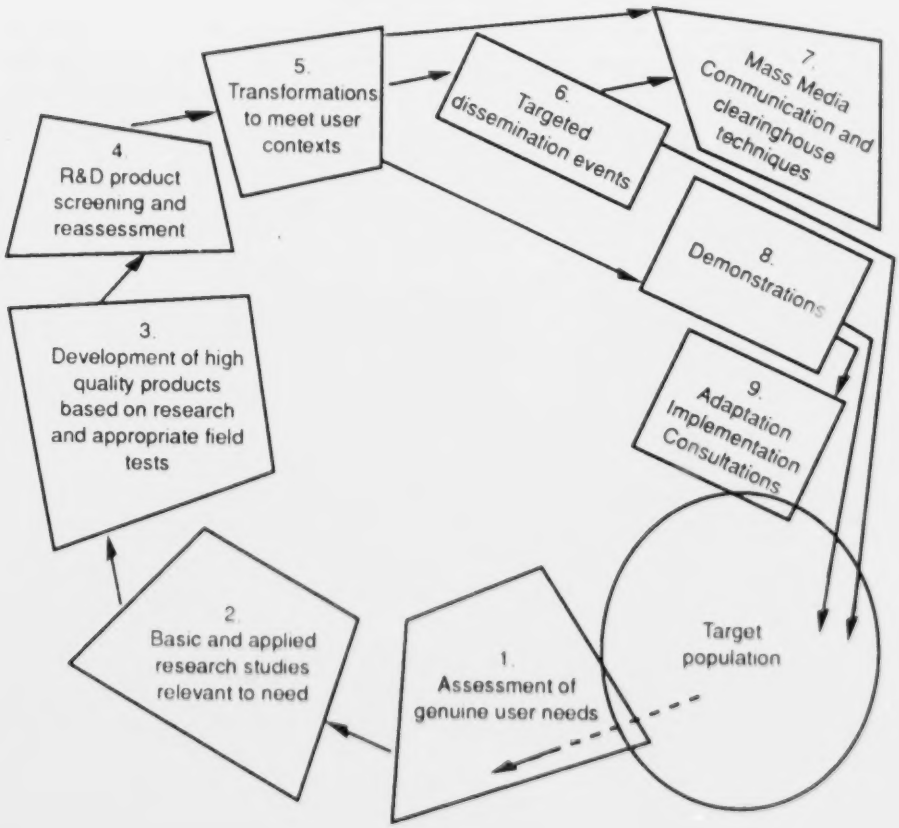
Addendum: Review of Some Models for Educational Research and Development

The meaning of much of this content may be opaque to those who did not attend the Washington seminar. To help readers bring the elements together, we provide a sort of "coda," a section laying out four different scenarios for linking research development with professional practice. These illustrative models, while not discussed at the meeting, cover the range of the issues discussed there. They are:

- A classic research-and-development scenario;
- A closely linked model of interorganizational collaboration for the conduct of research and school improvement;
- A model for extended linkage through interorganizational collaboration; and
- A "negotiated" model for the conduct of action research.

Note that these models illustrate different organizational arrangements for generating new knowledge or for addressing educational issues with different combinations of action and reflection. For example, Figure 2 shows a fairly explicit, classic and idealized model for bringing validated educational materials to schools, museums and vocational centers. The assumption is that some form of research-based knowledge has gone into the design and content of the products.

Figure 2 — **Ideal model of an R&D product dissemination service**



The model makes some assumptions we have already touched on. It separates out nine interlocking steps designed to bring valid materials and products to people who, theoretically at least,

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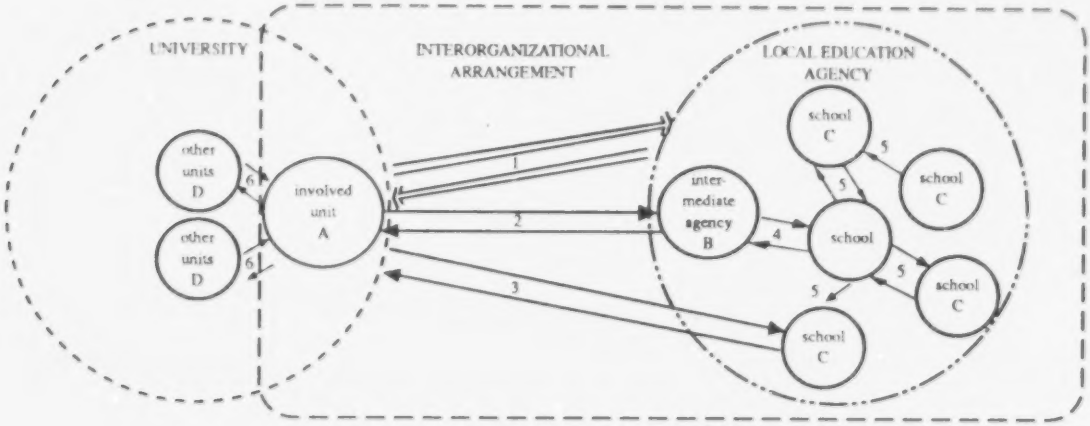
(a) would have wanted materials like these (steps 1 and 2);
(b) would find them adaptive to their contexts of use (steps 2, 3, 5, 8);
(c) can assume the materials to be of high quality, by virtue of their design by knowledgeable professionals, through screening, field testing, assessments, demonstrations (steps 3, 4, 8);
(d) will have opportunities to know about the materials, see them in use, be assisted if they decide to adopt them in their classrooms (steps 6, 7, 8, 9).

There are obviously some potential or real flaws here. How to assess genuine user needs? Will these still be the needs when the cycle is over? How elaborate, long, costly is each step? How much transformation (step 5) will really go on, if these materials are meant, as it seems, for large numbers of people? Does a target population mean that teachers themselves cannot initiate, design, assess the materials?

These reservations aside, the model does seem to combine disciplined research, the design of concrete materials and responsiveness to local contingencies. In some—but not in all ways—these criteria meet the objections of the more relativist voices at the seminar. Also, in areas such as mathematics and science, teachers and administrators are often hungry for didactic materials with some flexibility in their local use.

Let us now look at a different kind of interface between a research universe and a universe of practice:

Figure 3—**Interorganizational knowledge transfer paradigm**



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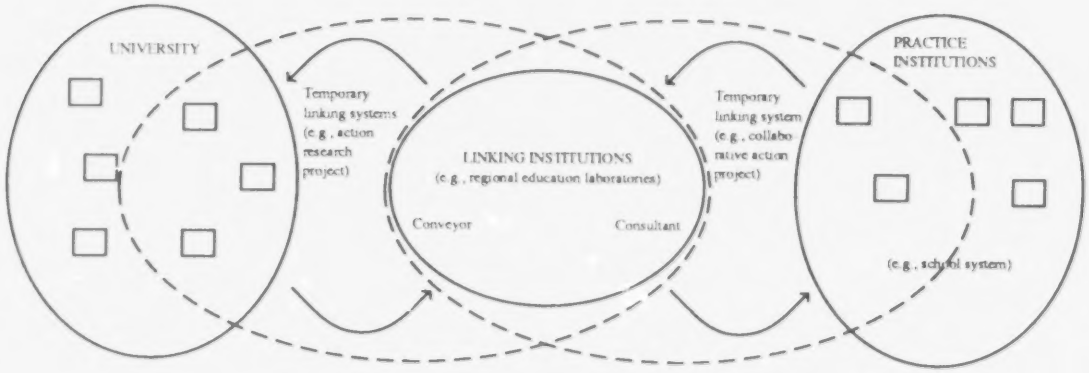
The idea here is that a research center can be connected in formalized ways to one or more school systems. Those connections can run directly between the university and the school administration (arrow 1), or between intermediate units in each agency (arrow 2). The university intermediary can also work directly with local schools (arrow 3), as can the unit in the school system itself (arrow 4). The other arrows show connections between the schools (arrow 5) or between the involved unit at the university and other departments or faculties (arrow 6).

Research on these arrangements is encouraging, provided they do not lapse into purely ceremonial relationships. Generally, the more business they do together, the more relationships they build at different levels and on different topics.

If we move up a notch, to a regional or even federal level, it becomes clear that the involved unit "A" corresponds to a regional research center and unit "B" to a regional educational "laboratory". So the American design has some logic when the dimension of scale is added to the model. It is not surprising, then, that other countries have thought along the same lines.

It is even possible to design a somewhat more dynamic model in which the linking institution is both a conduit for research and a locus of the field-initiated research mentioned earlier. Figure 4 shows these possibilities:

Figure 4 —**Dynamic role of linking institutions as conduits for research**



Solid lines represent *permanent* systems
Dotted lines represent *temporary* systems

Here, we have a university, linking unit and school system or series of schools. They are separate institutions but carry on a series of collaborative activities that essentially put the research unit and practice units into interactions that are either more investigative (action research

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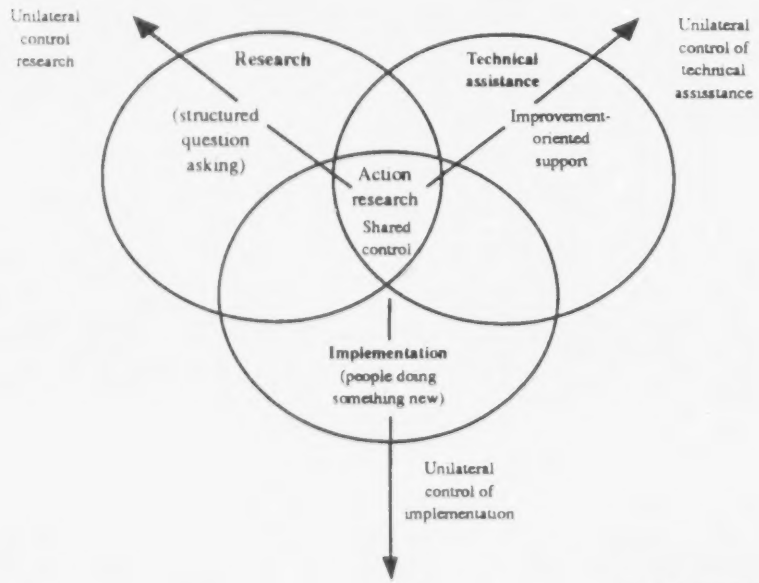
project) or innovative (collaborative action project). The functions of the linking institution are multiple, as indicated in Table 1.

Table 1—Functions of linking institutions

1.	**Resource transforming**: for potential users, (packaging, synthesizing, making easily available and usable).	4.	**Implementation helping**: supporting user's efforts to build knowledge into ongoing operations.
2.	**Resource delivery**: searching, retrieving based on user needs; passing on, informing, explaining.	5.	**Process helping**: listening, encouraging, talking through problems.
3.	**Solution giving**: advising, encouraging, adoption of idea, product as a solution to user problem.	6.	**Direct training**: giving workshops, classes, courses.

Finally, let us have a look at Figure 5, a model of action research that incorporates some of the more militant arguments listed earlier.

Figure 5—**Model of action research**



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The model in Figure 5 deliberately includes the dimensions of power, noted earlier, and shows that control is meant to be shared rather than controlled unilaterally from the outside. The action research cycle, we can see, comprises three panels: a question-asking component, an assistance or improvement component, and an implementation component. Finally, the model is meant to show that external expertise and aid are sought in all three panels but that their design and execution are locally negotiated.

Conclusion

International seminars are usually a vehicle for clarification or, in the best cases, for mutual enlightenment. In this case, an ambitious theme (educational research and development) was taken on, with relatively little differentiation or structure. As a result, it may be the case that more enlightenment resulted than did clarification. In particular, the American research and development infrastructure was examined by all and criticized for the most part by American commentators.

This synthesis has, here and there, sought to restore the balance somewhat by drawing more on the European and Australian interventions and by holding up the mirror to some of their self-admitted blemishes as well, along with the virtues of a continental approach to research and development. There is no doubt that this approach is qualitatively different from the lenses used in North America—no wiser, no more foolish, but different. This rapporteur has conducted research and been involved with experiments in Europe for some 21 years. To return to the USA is to disembark on another planet, culturally speaking.

There is a good deal to be learned from both planets. In effect, it is a platitude that the understanding of a second culture gives one more detachment and power in dealing with one's own. In both cases, important decisions are being made every day—in classrooms, school buildings, clinics, cantonal ministries, in legislatures and in professional associations, even in the homes of parents and children. Possibly all those decisions are being made without consideration of the most recent, most sound information that social science research and professional knowledge can provide. As a result, a powerful source of enlightenment and guidance is not being used to inform opinions, policies and practices at a time when it may be needed more desperately than ever.

This is also a time when we can no longer afford to finance the production of research knowledge without strengthening the conduits leading to its direct or indirect use. Otherwise, educational research is a wasted resource and its lack of circulation outside the scientific communities is little more than a history of lost opportunities.

Part II

ANALYTICAL PERSPECTIVES

Chapter 5

RESEARCH AND EDUCATION REFORM: A STUDY OF THE FEDERAL ROLE IN UNITED STATES' EDUCATION RESEARCH AND DEVELOPMENT

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In the United States, the Office of Educational Research and Improvement (OERI) in the Department of Education is the federal agency responsible for a broad array of education research, development, and dissemination activities. Over the years, OERI and its predecessor agency have been subject to widespread criticisms. Researchers have often claimed that support for education research has been insufficient, misguided, and poorly managed. Teachers and principals have often not heard of the office or claimed it has not done anything to improve their schools. Members of Congress have often expressed dissatisfaction and frustration—as often with their votes as with their words.

In 1990, Christopher Cross, then the Assistant Secretary of OERI, asked the National Academy of Sciences to examine how federally funded education research could better contribute to improving American education. The impetus for the study arose partly from these historic problems. In addition, since the early 1980s there had been heightened attention to the need to reform the schools. States have moved into that arena with their own initiatives. That raised the question of whether there should be changes in the federal sponsorship of education research and development. Lastly, the legislation that authorizes OERI was about to expire, and new legislation would soon be under consideration that could benefit from a study.

Primary Tasks

The Academy, through its National Research Council, convened 14 distinguished experts to conduct the study. The committee was given three primary tasks. First, it was to conduct a broad-brush survey of the entire educational research enterprise in the United States, so as to identify roles for the Department of Education and OERI that would maximize their impact. Second, it was to examine the structure and procedures of a few other federal agencies that support major research programs, including the National Institutes of Health and the National Science Foundation, to draw lessons from their experience for the Department of Education and OERI. And, third, the committee was to look closely at how OERI operates, with particular attention to:

- Its direction, structure, and operations;
- The national research and development centers and the regional educational laboratories, which currently conduct much of OERI's sponsored research;
- The mix of institutional and field-initiated research;
- The mix of basic and applied research; and
- The mix of research activities, demonstration programs, technical assistance, and dissemination efforts.

In the course of its deliberations, the committee determined that consideration of these issues would benefit from appraisals of two other issues: the factors that contribute to and inhibit substantial changes in schools, and whether and how educational research is useful and used. In short, what has education research contributed to new knowledge and to improvements in schools?

The committee did not deliberate the substantive topics on which OERI's research and development efforts should focus because another major study, started a year earlier, was considering this matter. The report of that study is now available from the National Academy of Education (1991).

Major Findings

The committee's examination of OERI and three federal agencies with research responsibilities in other fields led to the conclusion that a set of circumstances external to OERI, as well as others within the agency, have seriously impaired OERI's ability to marshall and apply the intellectual and organizational resources needed today to make major advances in virtually all areas of modern science and technology.

The committee's recommendations are grouped into four categories Governance, Organization and Functions, Operations, and Funding and are published in the report, *Research and Educational Reform: Roles for the Office of Educational Research and Improvement*

(Atkinson and Jackson, 1992). Rather than reiterating the specific recommendations, this chapter will highlight five themes that permeate the Academy report. They are:

Coherence

There is a need for greater stability in the leadership and operation of OERI, for greater coherence in its activities, and more sustained efforts. For instance, in the past 19 years the agency, and its predecessor, the National Institute of Education (NIE), had nine confirmed directors or assistant secretaries. Over the same period the National Science Foundation had six, the National Institutes of Health had five, and the Agricultural Research Service had three. In 1985 OERI replaced several longstanding centers with six new ones. Just 5 years later, two of those six were terminated and two others were moved to different institutions. OERI operates the Program Effectiveness Panel and the National Diffusion Network to identify and disseminate exemplary programs, but the selected programs are more properly thought of as promising, and OERI rarely provides support for further cycles of research, development, testing, and refinement, aimed at maximizing the programs' impacts, expanding their effectiveness in a wide range of settings, improving their potential for dissemination and adoption, and minimizing their costs. OERI also rarely provides the level and duration of funding needed to evaluate the program impacts rigorously.

Field-initiated (extramural) grants are limited to a maximum of 18 months with virtually no chance of renewal. By comparison, field-initiated grants awarded by the National Institutes of Health are for an average of about 4 years, with a moderate chance of an extension for an average of another three years, and for the most productive investigators there is no limit on how long grant support can be attained—it depends completely on continued productivity. The committee concluded that the scale and duration of support provided by OERI for education research and development activities was often far less than needed to make substantial progress on the complex and difficult problems for which the agency has been directed to find solutions.

Basic and field-initiated research

There is a need for much more basic and field-initiated research. OERI puts about 5.5 percent of its research and development funds into basic research. The Agricultural Research Service devotes 47 percent of its research and development funds to basic research, and the comparable percentages for the National Institutes of Health and National Science Foundation, respectively, are 60 and 94 percent. Only 3.3 percent of OERI's research and development funds, about $1 million, are used to support field-initiated research. The comparable percentages for the National Institutes of Health and the National Science Foundation are 56 and 94 percent, respectively. Data from the Agriculture Research Service were not obtained. Basic research explores the fundamentals of the studied phenomena, generates new views of reality, and stimulates alternative visions of the achievable. Field-initiated research supports the creativity and initiative of scholars throughout the country.

Professionalism

There is a need for more scientific professionalism within the agency. This is required to attract and retain top-flight people to the agency, its centers and laboratories, and its field-initiated research programs. The agency was found to be whipsawed by politics, frequent changes in leadership, and funding problems. As a consequence, much time is spent in crisis-management, changing of the guard activities, and rushing through paper work after delays, rather than in the stewardship required for successful investment in research and development.

Funding and staffing

There is a need for considerably more funding and staffing. Between 1973 and 1989, there was an 88 percent decline in the constant-dollar funding of the agency. Over the same time federal outlays for education, and federal expenditures for all research and development, rose by 30-35 percent. Since 1983 our nation has declared the reform of schooling to be a top priority goal, while slashing support for the pursuit of new knowledge about teaching, learning and the management of schools. Federal funding for education research is a much lower percentage of federal expenditures for all education activities than is federal funding for research in the other areas of federal involvement. Currently it is 0.8 percent, compared to 6.9 percent for agriculture, 3.2 percent for transportation, and 13.6 percent for health.

Despite the decline in funding, there is one office within OERI were funding has been expanded substantially—the National Center for Education Statistics (NCES). Since the middle 1980s the budget has tripled in constant dollars, the number of projects has tripled, and the staffing level has remained almost unchanged.

The committee made 23 recommendations for rebuilding OERI into a capable agency for managing federally sponsored educational research and development. For each recommendation the committee roughly estimated the needed additional funding and staffing. The total was $267 million annually in new funding and 214 additional program staff. If this support is not provided in the near future, the committee urged that the agency's mission and activities should be significantly narrowed, having found that it is trying to do far more than can be done well with the current level of funding.

Utilization and networking

There is a need for better linkages with practitioners—at the front end, when planning research and development, during the course of it, and at the end, through dissemination and technical assistance. The committee felt the allegations that OERI and NIE had neglected this need were untrue. Both agencies had recognized its importance and engaged in several creative attempts to forge better linkages. But the problems are difficult, several efforts were clear cut

failures, and those that showed promise were seldom refined and expanded because of funding constraints and frequent changes in direction of the agency.

Problems and Recommendations

The committee's examination of how schools change and how education research is used and useful led it to conclude—not surprisingly—that education reform is complex, difficult, and not subject to simple and quick fixes. Successful reform appears to require the active participation of teachers and principals in its planning, implementation, and refinement. Imposed solutions seldom work. It is also evident that we know enough today to improve many of our schools but don't know enough to provide high quality education for most students—at least with anything like the current level of resources we are willing to provide for schooling.

The NAS report (1992) presents an analysis of what is called supply-side and demand-side problems in linking research to educational practice.

Supply side problems:

(a) Poor quality research (trivial questions, inadequate methodology);

(b) Poor reporting of research to teachers (mind-numbing technical jargon, inscrutable statistics, and failure to resolve apparent contradictions with other research findings);

(c) Innovative programs that are so fuzzy the teachers don't know how to implement them, or so prescriptive that the teachers find them demeaning;

(d) Inadequate training and technical assistance for teachers when adopting research-based innovations (1-3 days appear to be the norm for in-service training in the United States); and

(e) Disappointing effects from widely touted research-based innovations when they are implemented outside of the development sites.

Demand-side problems:

(a) Teaching has 12 years of pre-professional training during the teachers' own elementary and secondary education, making it difficult for teachers to consider educational practices that differ from their own personal experience and training;

(b) Teachers' subsequent formal preparation for the profession usually provides little introduction to the contributions of research, where to find it, how to read and interpret it, how it might be used in their teaching, and how to implement change within schools;

(c) Teachers usually have non-stop instructional schedules, with grading responsibilities carried out after school hours, and thus very little time to reflect on their practice and examine new options;

(d) Schools provide teachers with few incentives and rewards for outstanding performance;

(e) Parents provide little impetus for change in schools: national surveys show that 65-69 percent of the adults think American schools deserve "C" grade or less, but only 26-27 percent of the parents think their children's own schools deserve such low grades; and

(f) School reform is a complex undertaking; the changes have to be integrated horizontally across subjects and vertically across grade levels, and that requires coordination and cooperation among many people.

Taken as a whole, this is a formidable set of barriers. But the committee thinks it is possible, over time, to lower many of them. Changes will be required on the part of our teacher education institutions and our schools, as well as in OERI. Though our report has several implications for the former, its recommendations are directed exclusively toward improving OERI. The recommendations that are aimed at helping OERI reduce barriers to linking research with practice include:

(1) Creating a diverse 24-member agenda-setting board comprised of practitioners, parents, employers, policymakers, researchers, and others who have made noteworthy contributions to excellence in education. The board would be responsible for managing a process for developing OERI's agenda priorities that reaches out to, and involves, the active participation of the various groups concerned with education.

(2) Establishing a Reform Assistance Directorate within OERI to coordinate various resources of the agency for support of school change efforts, with at least one staff member responsible for coordinating liaison with each of the following groups: parents, teacher education programs, professional education associations, commercial publishers, employers, and policymakers.

(3) Having the Reform Assistance Directorate support research-based refinement and rigorous evaluation of innovative programs and processes that have already demonstrated considerable promise.

(4) Fostering a nationwide electronic network that would allow all concerned with education to obtain access to the best research and exchange information on exemplary practices.

(5) Fostering collaborations among teacher and administrator education programs, state agencies, and local districts to help practitioners and researchers create learning communities that make use of research findings, practitioners' craft wisdom, and new inquiries in the quest for educational reform.

The committee did not develop specifics on how to foster the development of these learning communities, or on how they might be structured and operate. There is much work that remains to be done if this recommendation is to be successfully implemented. Some of the other presenters and discussants during this seminar have given thought to engaging teachers in collegial efforts aimed at professional development and school change, and they will have some things to say today and tomorrow about how this might be undertaken.

It should also be noted that some critics have quietly mumbled that the committee's recommendation on learning communities is an hallucinogenic vision or a Marxist plot. They seem to be unaware of the fact that project teams of engineers trained in both industry and government are common, and that physicians are universally trained in this country by teams of researchers and distinguished practitioners.

Implications for Forthcoming Studies

The National Academy of Sciences conducts most of its studies using interdisciplinary committees of experts. The committees direct the study and participate in many of its activities. We selected a particularly diverse group for this study of education research, including a Nobel Laureate in physics, a neurobiologist and former deputy director at the National Institutes of Health, and the chairman of the board of one of the largest agriculture seed businesses in the country. These people were able to tell us how other areas of federally sponsored research are conducted. They also were considered the most credible spokespersons for the study report before the Congress and business groups. We included several eminent social scientists, most of whom had done some work on educational issues but were not considered to be educational researchers. We had a man who had formerly served many years in the U.S. House of Representatives and a term as a state governor, who was invaluable in helping us to address the concerns of the Congress. We included three former public school teachers, all of whom were now involved in pre-service or in-service education of teachers. They were important to making the committee aware of the realities of schools and classrooms. And we had five persons who

had been involved in educational research and development for at least 25 years, witnessing the rise and then fall of federal sponsorship of this activity.

The diversity proved valuable not only for the different expertises and points of view that were brought to bear on the problem but for the synergy and syntheses that developed. For instance, the committee's recommendation on fostering learning communities of practitioners and researchers combined at least four lines of thinking: that of a professor of business who proposed successful organizations need to be learning communities, the work of educators who have been fostering collegial support groups among teachers, a few demonstrations of teacher-researcher collaborations, and a firm conviction by all members of the committee that researchers, as well as practitioners, have much to learn if we are to be successful in substantially improving our schools. Though other societies may not conduct their study with a committee, we strongly recommend that a similarly diverse and distinguished advisory group be engaged.

One of the first things we did as the study began was to set up meetings with key staff persons in the United States Senate and House of Representatives to discuss the study. We told them a little about it, but more importantly, asked them what questions they hoped it would answer. We wanted them to know we considered their concerns important, and we wanted the study to address those concerns. We subsequently invited four of the key Congresspersons to address the report, three accepted, and that was important both for the information that was exchanged and for the goodwill it created between the committee and these persons. We have no doubt that these steps were important to the eagerness with which the Congress awaited the report and to the praise it received from both chambers of the Congress and by the leadership of both political parties. Our experience is entirely consistent with Paul van Oijen's observations (see Chapter 6), which suggests that informal consultations with target policymakers is an important predictor of research utilization.

We also sent letters to about 800 persons and organizations, soliciting their thoughts and fugitive literature. The letter went to researchers, teachers, and principals; directors of research in large school districts; governors and chief state school officers; education writers; professional organizations; business organizations; foundations; and administrators and staff of federal research agencies, including a random sample of one-third of OERI's professional staff. Almost 100 replied. We tabulated and reported their most frequent suggestions for improving federally sponsored education research and development. The most common ones were to establish better linkages between research and practice (31 percent); coordinate OERI's activities with those of other federal, state, and local agencies (24 percent); and have OERI support more basic research, field-initiated research, and/or long-term research (21 percent). We also used these replies to inform our framing of the issues to be covered by the study, for our literature searches, and for quotations that were included in the report to illustrate important points. We believe it was well worth the effort.

Financing of Education Research

One of the most trying tasks we faced was trying to figure out how much is spent in this country on education research and development by all parties, how that compares with prior levels and expenditures, and how it compares with research and development expenditures in other fields. The data reported by budget function in the President's budget and by the National Science Foundation were found to be entirely inappropriate for estimating federal expenditure, for reasons mentioned in our report. After searching in vain for other estimates, we finally called federal agencies believed to fund most of the educational research and development, talked at length with their budget staff and program directors, and examined thousands of pages of computer printouts describing funded projects. Unknown to us, the President's Office of Management and Budget undertook a similar analysis at the same time. The separate efforts yielded quite similar results ($310 and 364 million). In 1975, a comprehensive estimate indicated the entire federal government invested $1.1 billion (in 1990 constant dollars) in education research and development, so in real dollars the total has declined by about 68 percent.

States were found to fund about $21 million of education research and development through their state departments of education, a more modest decline from $26 million, in constant dollars, since 1973. A much larger source of state funding is through support of public colleges and universities, where faculty members are expected to spend part of their time doing research, and are provided overhead and sometimes additional support for that work. A scholar recently estimated this form of funding at $330-400 million. We were not able to generate comparable estimates for prior years. Charitable foundations' funding of education research rose from $20 million in 1981 to $36 million in 1990, using constant dollar comparisons. We were not able to find estimates on the extent of funding for education research and development by local school districts. Anecdotal information suggests there has been an increase, primarily focused on the monitoring of student achievement and the evaluation of local innovations. The professional education associations, and more recently, professional business organizations, conduct some research, but again no aggregate data were available. Private businesses also conduct education research and development, either for purposes of improving their own in-service training of employees or for the development of commercial educational products. The extent of these activities is unknown, but commercial textbook publishers have long been widely perceived as ignoring most research. As a result of these problems we were not able to prepare an estimate of total United States expenditures for education research and development. A "guesstimate," however, would be roughly $900 million, which equals about one-quarter of 1 percent of total expenditures for education.

Usefulness and Uses of Education Research

Another of the most difficult tasks was preparing a chapter discussing the usefulness and uses of educational research. A few members suggested that we examine the degree to which educational research and development had been usefully applied and the benefit/cost ratio of the

entire federal investment in this area. The committee thought that could not be done well in the time available, if at all. Rather the committee sought to address the narrower question of whether educational research is ever used and useful, and if so, where and how. Even this approach was problematical. Some of the committee wanted the discussion to be wide ranging, others thought that it should be short and salient, and still others wanted it to focus intensively on analyzing a few examples. Our early drafts describing the contributions of basic research often seemed arcane or trivial. Innovative programs that might have incorporated research findings seldom yielded this information easily since program developers often had not documented this and only had general recollections. Worse yet, when examining the effectiveness of widely touted innovative programs, we often found the evaluations to be weak, and thus were unsure of the program impacts.

Despite these problems, there are several reasons to undertake such an analysis. First, the question of use and usefulness was repeatedly raised by the key staffers in the U.S. Congress. Several had told us bluntly that all other questions about the enterprise are of little interest to Congress until these two are answered in a satisfactory manner. We suspect similar views are held by the parliaments of many European countries. Second, when undertaking this examination, the committee discovered what a poor job OERI and NIE had been doing in publicizing the accomplishments of their work. That identified a serious problem within the agency which can be remedied, and we think you will want to determine if a similar problem exists within your ministries that are responsible for educational research. Third, our efforts serendipidously alerted us to the fact that it is very difficult to secure funds for refining innovative programs and rigorously evaluating them. That led to a recommendation that OERI provide funding for this purpose. And lastly, if you should find that your ministries, like OERI, are doing a poor job of preparing information on the uses and usefulness of education research and development, then your own efforts to do so could serve as a model for their subsequent efforts.

Reporting

At the National Research Council, each report must be reviewed and approved by a separate Report Review Committee (RRC). The Executive Office assembles each RRC and carefully guards its independence. The six to eight RRC members review the report and submit written criticisms, suggestions, and other comments. In the case of our report there were a total of 37 pages of single-spaced comments. Then the study committee must respond to the RRC in a memo that explains what changes have been made, which suggestions were not incorporated, and why. A revised draft of the report accompanies that memo. Both are reviewed by the RRC, and if they find the response acceptable, approval is granted for release of the report. If they find the response unacceptable, there are subsequent rounds of memos, revised drafts, and reviews of those. In the case of our report, only a few changes in phrases were requested after the first round, but two or three rounds, spanning several months, are not uncommon. We urge that your countries' studies of educational research plan to incorporate a similar review process prior to

releasing your reports. Every study director at the National Research Council dreads the RRC, and every one thinks that it has improved his or her committee's report.

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Chapter 6

CHANGES IN THE RELATIONSHIP BETWEEN EDUCATIONAL RESEARCH AND POLICY: THE CASE OF THE NETHERLANDS

by

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"A study will be commissioned," has often served as a handy pretext for ministers who in fact have not the least idea how to tackle a particular problem. Although this still occurs, the traditional image of research in support of policy has been changing for several years.

Since the mid-1970s, policy in the Netherlands has been shaped to a certain extent with the help of external, academic research of a technical, scientific and social nature. This form of external acquisition of knowledge for policy purposes is still faced with numerous problems, however, despite the growing experience of clients and researchers alike. The main problems can be described as follows:

- Researchers are confronted with unclear instructions.
- Policy has already moved on to another stage by the time the findings are made known.
- Reports are left unread.
- Research is not properly used.

At the same time, of course, there are many examples of studies which have been put into effective use in policymaking.

This chapter looks at educational research from the point of view of the policymakers. The first section contains statistics illustrating the volume of educational research in the Netherlands. Problems of aligning policy and research are considered in section 2. An analysis follows of the relationship between research and policy in general (section 3) and with specific reference to educational research (section 4). A concluding section anticipates developments in educational research in the 1990s.

Paul M. M. Van Oijen

The Volume of Educational Research

In comparing the volume of research funds for a particular area of policy, two frames of reference are of direct relevance: general government expenditure on contract research and comparison with other countries with a similar standard of living.

Educational research is funded from what is called the third flow of funds, i.e., funds for contract research commissioned in this case by Dutch government departments. The second flow of funds constitutes grants for research projects disbursed by the Netherlands Organization for Scientific Research (NWO), while the first flow of funds refers to the block grant which the universities receive from the government. Table 6.1 shows the trend in the level of funding from 1970 to 1989.

Table 6.1—Funding of social science research from the first, second and third flows of funds in four separate years in millions of Dutch guilders (in constant prices)

	1970	1975	1980	1989
First flow of funds	102	177	212	191
Second flow of funds	8	11	10	15
Third flow of funds	109	158	206	150
Total	219	345	428	356

Source: Langendorff (1983); *Science Budget 1989*.
Note: Figures rounded to the nearest whole number.

Only NWO funds for social science research have shown an increase. After peaking in 1980, spending on contract research (third flow of funds) fell back to the 1975 level in 1989. Departmental budgets show that most cutbacks on contract research have been made in the sectors of education, public health, home affairs and agriculture.

The official budgets of direct funding for social policy research in various ministries in 1989 were as shown in Table 6.2. This amounts to a total of almost 90 million guilders. The remaining funds are either less visible in the national budget or are allocated via permanent institutions (Social Cultural Planning Office [SCP], Netherlands Organization for Applied Scientific Research [TNO]) or by other government departments not named above.

Table 6.2—Sources of funding for social policy research, 1989

Housing, Physical Planning & Environment	30.0 million
Education & Science	16.5 million
Welfare, Health & Cultural Affairs	14.5 million
Social Affairs & Employment	10.5 million
Economic Affairs	6.0 million
Foreign Affairs (development cooperation)	4.4 million
Justice	63.6 million
Home Affairs	1.9 million

The current level of funding for policy-related educational research roughly corresponds to the average size of Dutch government departments, i.e., around Dfe 3 million per directorate-general. Within the Ministry of Education and Science this is broken down as shown in Table 6.3 below.

Table 6.3—Allocation by sector, 1989 (millions of guilders)

Primary education	2.5*
Secondary education (including vocational education)	3.5*
Adult education	3.0
Teacher training and education support structure	0.8*
Personnel policy	3.7
Higher education and research	3.0
Science policy	1.0

* Government component of SVO budget

Besides the component of its budget reserved for research requested by the government, the Foundation for Educational Research (SVO) also has a field component (5.9 million) for research on behalf of the primary and secondary education sector, a component (2.9 million) for fundamental educational research, and funds to cover equipment and running costs (for the SVO office and the research institutes). Finally, the education inspectorate has 0.8 million to spend on studies and an estimated 20 inspectors and other staff (full-time equivalent) able to devote their time to research as opposed to visiting schools.

The sum of all budgets for educational contract research is equivalent to about 0.1 percent of the national budget for education spending. Developmental activities, the D of R&D, are not included in this 0.1 percent.

For the record, it should be mentioned that educational research is also carried out by other bodies, namely, international organizations such as the OECD/CERI and CEDEFOP, education departments in universities (with government funding), universities and colleges of higher vocational education (internal research), the Council for Higher Vocational Education, advisory bodies such as the Advisory Council on Government Policy (WRR), the Central Bureau of Statistics (CBS), the Social and Cultural Planning Office (SCP) and the Science Policy Advisory Council (RAWB), the larger municipalities, and firms and their training departments.

A comparison of the expenditure of the ministries shows, therefore, that the amount spent on educational research is reasonably sufficient. The same is true by international standards. Table 6.4 shows expenditures on educational research and social science research, respectively, and the proportion of educational research as a percentage of total expenditure on academic research in the United Kingdom, Germany, France, the United States, and the Netherlands. The figures for each country are broken down into research financed from the second and third flows and from the first flow of funds.

Table 6.4—Expenditure on educational research and wider categories of research in millions of dollars, 1987

Country	United Kingdom		Germany		France		United States		Netherlands	
Source (Flow)	2e+3e	1e	2e+3e	1e	2e+3e	1e	2e+3e	1e	2e+3e	1e
Education research	13	45	6	55	>1	4	43	192	9	18
Social science research	57	282	43	293	69	100	499	744	48	13
Total academic research	585	1487	730	2125	994	955	9892	3097	191	59
Percent of total for educational research	2	3	1	3	0	>1	>1	6	5	3

Source: Irvine, Martin and Isard (1990).
Notes: (1) Figures rounded to the nearest whole number. (2) In continental Europe education research includes the Pedagogical Sciences. (3) Irvine et al. (1990) include economic research among the social sciences.

Of the above countries, the Netherlands spends the highest proportion of contract funds on educational research, i.e., 4.8 percent of total expenditure on academic research.

Analysis of the Relationship Between Research and Policy

As more policy-related research was commissioned during the 1970s, the problems of applying the results to the policymaking process became increasingly apparent. These problems

related not only to the stages following the publication of the findings but also to preparing and implementing the research, for instance, with regard to supervisory committees. Scholars in the United States, the United Kingdom, the Netherlands, Sweden and Switzerland, among other countries, have studied the relationship between research and policy in an effort to explain and ultimately remedy these problems.

In the United States' literature it is mainly Havelock (1973) and Caplan *et al.* (1975) who refer to the gap between research and policy and the need to bridge this gap by the use of "linking mechanisms." Caplan *et al.* describe research and policy as two "communities" with different values and reward systems and different languages. It should be noted here that a much lower percentage of civil servants in the United States working for the government have a background in social sciences than is the case in the Netherlands.

The situation in the Netherlands could be described in terms of a "three-communities" model, the three communities being research, research division, and policy. Most ministries have research divisions (often one for each directorate-general) which are responsible for programming, contracting out and supervising research. They form the link between the policy departments and the research institutes. Other bodies working in the relevant policy area may also be involved in supervising research, in which case a fourth community is added. In the case of educational research relating to primary and secondary education, the Foundation for Educational Research, in its capacity as an intermediary body, constitutes the third community (see also Chapter 3 in this volume).

Although there is less conflict in the Netherlands than is apparent in some other countries, notably the United States, this is not to say that policymaking bodies are always satisfied with research findings or that researchers are always happy about the clarity of their instructions or the notice taken of their findings.

Findings from the literature

The relationship between research and policy is not a new topic of study in the Netherlands. As long ago as 1955 the *Sociologische Gids* (guide to sociology) contained an article by Van de Vall entitled "Social research and the client," which called for an analysis of the relationship between the two and the involvement of clients in the research. Empirical research into the relationship between research and policy was first carried out in the Netherlands by Van Brederode-Ritter (1969) and was related to child protection research and the judicial authorities. The most debated study in the Netherlands is one by Van de Vall (1980), who advocated the creation of a separate methodology or paradigm for social policy research. Hutjes and Cuisinier (1982) produced an overview of all the research conducted in the Netherlands since 1970.

Two extensive empirical studies were carried out in the first half of the 1980s as part of the multiyear plan for social research and policy, a policy document published in 1978 by the Minister for Science Policy. These studies related to research programming in ministries (Van Hoesel, 1985) and cooperation and coordination at the project level (Van Oijen, Snellen and Van Westerlaak, 1984)

The conclusions of foreign research are fairly wide ranging. Lindblom and Cohen (1979) criticize some books, articles, conference papers and committee reports on the low utilization of research because of "their blind man's view of the elephant." The metaphor of the blind man who feels only the trunk, tusk or leg of an elephant and thinks he knows what the elephant looks like cannot be applied to the literature study carried out by Hutjes and Cuisinier (1982, p. 69). Based on a study of empirical research findings, they identify nine factors that account for variations in use. Hutjes and Cuisinier emphasize above all the complexity of the many problems that remain unsolved and analyze the factors standing in the way of a harmonious relationship between research and policy. The three-way classification shown in Table 6.5 is the most common.

Table 6.5—Factors accounting for research use

	Research	Relationship	Policy
Project level	Type of research projects	Interaction	Pattern of relative influence compared to other information
Psycho-social factors	Type of researchers	Officials and intermediaries	Type of policymakers
Structural level	Institutional Organization	Forms of bodies	Intermediary relative influence of research on policy systems

Source: Adapted from Hutjes and Cuisinier (1982).

Caplan *et al.* (1975) also identify three kinds of explanatory theories:

(a) Policy-constraint theories: policy is action oriented and is unable to handle the knowledge-oriented research findings properly.
(b) Knowledge-specific theories: academic research has its limitations and therefore produces limited findings which cannot automatically be applied.
(c) Two-communities theories: policymakers and researchers have different cultures, each with its own language, which hinders communication.

Some empirical findings of Dutch studies

The explanatory model produced by Hutjes and Cuisinier (1982), which incorporates the three theories put forward by Caplan *et al.* (1975), was used in an extensive empirical study carried out in the 1980s (Van Oijen *et al.* 1984) of the relationship between research and policy and the reasons why the results of policy research are or are not used. The study involved a comparative case examination of 45 research projects commissioned by 10 government departments (see Table 6.6), of which 40 related to policy research concluded before 1982. For these research projects it was possible to assign scores on a 10-point scale indicating the degree of use. These scores were related to other aspects (for example, policy background) in an attempt to explain the variations in use.

Table 6.6—Degree of usability and use of 40 policy research studies commissioned by government departments in the Netherlands until 1982

	Usability			Use			Number of cases
Ministry	low	fair	high	low	fair	high	total
Social Affairs and Employment	2	1	4	3	0	4	7
Education and Science	3	3	1	4	3	0	7
Cultural Affairs, Social Work	2	2	2	3	2	1	6
Justice	2	2	1	1	3	1	5
Home Affairs	2	1	1	2	0	2	4
Housing and Planning	1	2	1	1	2	1	4
Health and Environmental Protection	0	2	1	0	2	1	3
Agriculture and Fisheries/ Foreign Affairs*	1	2	1	1	1	2	4
Total (N)	13	15	12	15	13	12	40

Note: The Ministries of Agriculture and Fisheries, and Foreign Affairs have been counted together because of the small number of projects involved.

There are small but obvious differences between the ministries. The differences between usability and use in each ministry are not very great because the numbers involved are small. The two largest commissions, Education and Science and Social Affairs and Employment, do, however, differ significantly in degree of use. This research project, entitled "Cooperation between research and policy," focused in particular on the question of whether certain forms of cooperation had led to better alignment of use. The results are shown in Table 6.7. It can be inferred that the form of cooperation proved to be of little significance.

Table 6.7—Form of cooperation between research and policy in 40 policy research projects

	Use			
Form of cooperation during research	low	med	high	total
Informal consultation	0	1	3	4
Formal consultation (no supervisory committee)	1	1	2	4
Large supervisory committee	6	1	5	12
Small supervisory committee	7	5	1	13
Combination of the above	1	5	1	7
Total (N)	15	13	12	40

There is no reason to choose one or other of the above forms of cooperation as a recipe for success. What is striking is that large supervisory committees lead to a high score at both extremes: they either have a very favorable effect on use or precisely the reverse. Large committees can sometimes hinder the use of research because of the many interests they represent and because the members cannot agree on how to interpret the findings, considerations or recommendations put forward. Analysis of other aspects of cooperation likewise point to the general conclusion that cooperation between research and policy is not in itself sufficient or even, in some cases, necessary to ensure a proper match. Each case is given scores for five groups of factors, such as the receptiveness of policy to research and the receptiveness of research to policy. Table 6.8 shows the rank order correlation coefficients between factors and scores for use.

Table 6.8—Rank order correlations of factors and scores for use

Factors	Correlations
Receptiveness of policy to research	
Rationality of policy	0.46*
Need for information	0.36*
Absorption capacity	0.31*
Receptiveness of research to policy	
Insight into policy	0.07
Tolerance	0.32
Capacity	0.30
Accessibility of research/policy	
Gap	0.28
Transfer by intermediaries	0.02
Extent of communication	0.34*
Qualities of research product	
Technical quality	0.17
Style of presentation	0.17
Dissemination	0.42*
Research management problems	
Money	0.15
Time	0.28
Assessment procedure	0.31
Ethics	0.21
Continuity of contract relationship	0.44*
Complexity of contract relationship	0.21

* Significance level: 0.01 percent (scores over 0.27 are significant at the 5 percent threshold level of statistical significance).

The dispersion of the receptiveness of policy to research accounts for most of the variance in use. The rationality of policy proved to be the primary factor (0.46). A striking aspect with regard to the receptiveness of researchers to policy is the negligible role played by insight into policy (0.07). The three factors in this group produce different scores: it is not knowledge (policy insight) but the expertise of researchers (tolerance and capacity) which encourage use. Overall, it can be concluded that the receptiveness of policy to research accounts for the greatest dispersion of use. The receptiveness of researchers to policy and the mutual accessibility of research and policy are also of importance, but to a lesser extent. The quality of research products and research management factors tend to be less significant.

Besides this analysis, the projects were also studied using comparative case study methods. This produced the conclusion that three factors determined the use of research in policy:

- Position of the policymaker,
- Rationality of policy, and
- Clarity of the instructions.

These and other findings from the study point to policy as the main source of variance in use. The policy-constraint theories identified by Caplan *et al.* (1975) prove to account for most of the problems in Dutch policy research; researchers and clients alike already have the necessary experience and familiarity with each other. Contrary to Caplan's *et al.* findings, however, a number of policy processes in the Netherlands have proved open to assimilation of external research findings whereas others are subject to the limitations traditionally attributed to policy, namely, that they are action-oriented only and subject to political influences. This finding tallies with the recommendation made by Rein (1980), who saw no point in further study of the relationship between research and policy unless attention were focused on the knowledge elements in policy and studies were not limited to action or decisionmaking elements.

Problems of Aligning Educational Research and Policy

Barriers to research use

Of the 10 government departments studied (see Table 6.6), the use made of research was found to be lowest in the Ministry of Education and Science. The seven cases examined related to primary education, secondary education (comprehensive school experiments), teacher training and adult education. Among these, research in relation to the least controversial policy—the integration of preprimary and primary education—was used most. Scheerens (1983), who studied the relationship between educational research and policy in the same period, arrived at a similar empirical conclusion with regard to the utilization of research in primary education. No comparative study of the ministries has been made since, although two studies of policy-related educational research conducted by Nijssen (1986) and Van Bochove (1989) identified similar problems.

The reasons why the Ministry of Education and Science should compare so unfavorably with other ministries are manifold. The report *Civil Servants and Researchers,* which describes the research culture in various ministries, puts the Ministry of Education and Science in a category of its own:

> Educational research is a closed market in which a small number of para-university institutions and university departments conduct virtually all research. There is an extensive network of committees and working groups that controls research programming and the assessment of proposals. In comparison with other ministries, the picture that emerges is one of over-organization. Research projects relating to national innovation schemes have to go through 24 separate assessment procedures before work can begin. As a result, there is a large gap between

> research and policy, not because they are two different worlds but because of red tape. Research is contracted out and administered by an external body, the Foundation for Educational Research." *(Civil Servants and Researchers*, p. 31)

At the Dutch Educational Research Days in 1983, which were devoted *inter alia* to the usability and relevance of educational research, Van Oijen and Van Westerlaak reported on the poor standing of the Ministry of Education and Science compared to other ministries. They put forward the following explanations:

- Lack of clarity about the objectives of research for policy purposes;
- The commissioning of evaluative studies, whose only purpose was to conclude political debate for the time being;
- The vast number of definitions of the quality of education;
- The delegation of policy implementation to external committees or special organizations: the Ministry did not do its own "dirty work"; and
- Because of the structures created, the initiator and considered user of the research was very often in the role of distant observer.

In brief, this led in many cases to a situation in which:

- Initial policy questions were distorted.
- The questions to be answered were too complex and extensive.
- The questions asked and the whole research process were controlled from the very beginning by the education sector concerned.
- A great deal of bureaucracy was involved.

Looking back, it can be added that during this period policy on secondary education in general was struggling to make progress while the shaping of policy in adult education was frustrated mainly by inter- and intra-ministerial battles over competence. The long-term perspective is discussed in the concluding section. To end on a more positive note, the following is an extract from a speech by former Minister of Education and Science Wim Deetman, who was largely responsible for education policy in the 1980s:

> "Many possible views could be adopted regarding research in support of policymaking. I shall confine myself to considering three of them.
>
> "At first sight, the everyday practice of policymaking does not seem to depend on research to any great extent. Ministers are concerned with administrative and political considerations, such as: what will Parliament say, how will workers in the field react, what are the financial consequences, and what relationship is there between new measures and existing legislation? Research mainly enters the picture through the media, for example, when a researcher wants to obtain a little

more publicity for his findings and dwells on the shortcomings of government policy.

"If I were to base my opinion on a superficial impression, I would have to say that I agreed with those researchers who claim that research is either used to legitimize policy or else ignored.

"However, if one takes a more thorough look at the role of research—which I would like to do in order to give my second answer—one has to ask where the information on which policies are based comes from. My officials are expected to use sound data and authoritative sources in preparing their policy proposals and analyses. Research can in fact play a part in various ways. To sum up, my second answer to the question as to what role research can perform in support of policymaking is, that this role is greater than you probably realize and smaller than you would probably wish.

"Thirdly, I should like to state a fundamental view regarding the relationship between research and policymaking in general and, more particularly, policymaking with regard to higher education. Research, particularly when used as an aid to policymaking, serves to provide a critique of policy on the basis not of opinions but of facts. If research shows that a certain policy is not producing the intended results, then it must be reconsidered. Of course, this very rarely means that the policy in question has to be abandoned entirely. Crucial experiments which result in the rejection of a whole theory are unusual in your field, as elsewhere.

"Often, the fact of the matter is that research can only examine a small part of the policy which has been adopted, and cannot be expected to review the whole package of policy considerations, let alone to study them empirically.

"Thus, research into higher education policy has a critical function to perform. This is no easy task. There is probably no other field of policy in which such an aptitude for criticizing research itself can be found." (Wim Deetman, 1989).

Mr. Deetman's words, addressed to an international audience of scholars in the field of higher education, imply that there is some scope for learning to work with research findings within the Ministry, and not only in respect of higher education policy.

Three Decades of Educational Research and Policy

Apart from the opinions expressed by Mr. Deetman, the above is no more than a description of a given period—from the end of the 1970s to the early 1980s—which should not

be allowed to distort the overall picture of the alignment of educational research and policy. However, the problems regarding educational research were also raised by the present minister, Dr. Jo Ritzen, in his opening speech at the Dutch Educational Research Days 1990. His comments were based *inter alia* on the *Welten Report* (1976) and the recommendations of the Social Science Council (1989). A global analysis over a longer period might therefore clarify matters somewhat. The analysis below is based on the impressions of various informed parties, not on the systematic study of source material. The comments on the role of the Dutch Foundation for Educational Research (SVO) are derived in part from Mr. Lodewijk's contribution to the SVO conference on *Education in the Year 2000.*

The 1960s

As a result of the post-war baby boom, the education system grew even more rapidly than the Dutch economy. The main policy measure taken during this period was the introduction of the Secondary Education Act of 1963, popularly referred to as the "Mammoth Act" because of its sheer scale. Considerable control was exercised by the Ministry in terms of funding and regulations.

Policy development (for example, with regard to the Secondary Education Act, 1963) relied heavily on the expertise of the inspectorate. The Ministry had insufficient academic and educational know-how to contract out and supervise research, which was partly why the Foundation for Educational Research (SVO) was established. The SVO awarded grants on the basis of research proposals submitted by the universities or related institutions for educational research.

The social sciences began to specialize in particular fields, the emergence of educational sociology at Leiden University being the most notable example. The alignment of research and policy was not recognized as a problem as such. Toward the end of the decade, the relevance of research to society became an important issue.

The 1970s

Under Jos van Kemenade as minister the notion of constructive education policy took shape, as reflected in the policy document "Contours of a future education system." Educationalists with a social science background were recruited into the Ministry. The "McKinsey reorganization" led to the establishment of separate departments for policy development and planning in the Ministry.

New policy initiatives were introduced across the board. Plans for the new-style primary school proceeded smoothly (later followed by the new-style colleges of education). The idea of middle schools (reform of the secondary school system) floundered, while the reorganization of

the universities was not completed until the introduction of the University Education (two-tier system) Act under Minister Aäron Pais in the early 1980s.

Research was seen as an important factor in educational reform. At the same time, programming and consultative networks meant that decisionmaking in relation to research became entangled in a web of conflicting interests. The growth in research funding brought about the institutionalization of educational research, with a small number of institutes sharing out the closed market between them. Contract researchers and research institutes discovered research programming as a tool. The SVO developed from a passive grant-awarding body into an active regulator of the market. The goal of socially relevant, problem-oriented research encouraged the establishment of departments of education in the universities. High expectations were initially cherished with regard to research findings. However, neither the Ministry nor the dozens of committees, advisory councils and organizations set up around it could cope with the flood of findings. The problem of the alignment of research and policy was highlighted by the Minister for Science Policy in the 1978 policy document, the multiyear plan for social research and policy.

The 1980s

The economic recession in the wake of the second oil crisis necessitated a tightening of the public purse strings, which left its mark on education policy. The main policy issues of the decade were the introduction of the new-style primary schools, educational priority policy and the attempts to check the growth of special education. The debate on secondary education, having reached a stalemate, was given fresh impetus by the report of the Scientific Advisory Council on Government Policy on basic education (a core curriculum for 12 to 15-year-olds). It was some years later that the legislation on basic education was accepted in Parliament. The implementation in the schools began in September 1993.

The somewhat slower pace of development in primary and secondary education policy was compensated for in the sphere of higher education, which saw a series of policy operations including the introduction of the two-tier system, expansion of scale in higher vocational education (HBO) and much greater autonomy for HBO institutions under the Higher Vocational Education Act of 1986. Other innovations included conditional funding of university research, and the Financial Aid to Students Act, including grants for senior secondary vocational education (MBO) students and secondary school students over 18 years of age.

Quality in higher education and the higher education bill

Various ministries formulated policies on general and vocational education for adults. The Open University opened its doors. Within the Ministry the concept of hands off government was to take shape in the second half of the decade. Greater autonomy for educational institutions has meant slimming down the Ministry, while at the same time creating a new need for information.

Dwindling funds (from the late 1970s onwards) led to rationalization among the research institutes. Under the Education Support Structure Act, the SVO regulates applications from government, the education world and the academic community (in a ratio of 40:40:20). It acts as a broker, mediating between the supply and demand side of research by, for instance, exploring the areas in which research is required. In the first half of the 1980s there was still an educational research division within the Ministry which was able to coordinate the questions of policymakers and address the issue of the use made of research findings. By the late 1980s, after a series of reorganizations, this service had been cut back to a minimum.

The rush of activity in the field of higher education policy was reflected in the research budget of 3 million guilders that was allocated to the Directorate-general for Higher Education and Research in 1984. The modest level of coordination meant that policy divisions found themselves in the roles of both client and supervisor of research projects. The Personnel Policy Department also had a budget of almost 4 million guilders, which it was able to spend on relevant research.

The problem of the alignment of research and policy was recognized throughout the Ministry. During the course of the decade more was learned about the limitations and possibilities of research, and expectations have become more realistic. Clients in the Directorate-general for Higher Education and Research and the Personnel Policy Department now seem to complain far less often about procedures and are able to contract out research at short notice, if necessary. The service recently introduced by the SVO for this purpose represents an important step forward.

In a 1989 report, the Social Science Council of the Royal Netherlands Academy of Arts and Sciences (KNAW) questioned the volume, usefulness and quality of educational research (with a view *inter alia* to increasing the budget of the Netherlands Organization for Scientific Research).

Educational Research in the 1990s

A very broad description of 30 years of educational research and policy is no kind of basis for extrapolation to the current decade. Organizational learning processes have certainly taken place, however, and it can be assumed that these lessons will not be forgotten. On the research side, the professionalism of researchers and institutes has increased. The planning of research, presentation, knowledge of policy and research methodology have also improved. Whether the state of educational theory has developed at the same pace is less clear. At the same time the "traditional" research institutes and university departments concerned with educational research now face greater competition due to the emergence of non-university institutes and consultancies and the growing interest of educational policymakers in the expert recommendations and data that can be furnished by national institutes whose knowledge extends beyond the Dutch education system (e.g., the Scientific Advisory Council on Government Policy,

the Social and Cultural Planning Office, the Central Bureau of Statistics, the Government Expenditure Research Institute (IOO) and the Social Economical Advisory Council). The studies of OECD and OECD/CERI, especially on education indicators, and of the European Community and the Council of Europe more generally, feature prominently on the research and the policy agenda.

On the policy side the last three decades have seen an improvement in the ability to recognize the undeniable, but relative, value of research. Receptiveness to research findings has increased, as has the ability to assess critically the (limited) scope for translating empirical findings into policy. In the latest reorganization of the Ministry every field department has been given an analysis division responsible for policy research, thereby ensuring that one of the basic conditions for the utilization of research findings is met, namely, that there should be sufficient capacity for processing information.

As far as the interplay between research and policy is concerned, no changes are expected in higher education policy and policy on the conditions of employment. The existing procedures and the relationship between the research world and the policy world are considered satisfactory. In the primary and secondary education sectors, the SVO dominates the interaction process. The facility created by the SVO for the rapid out-contracting of short-term research is a positive development. Another positive step, at least from the policy side, is the focus within the future research program on a limited number of important themes, in keeping with the views expressed by the Minister at the Educational Research Days 1990. It is still unclear, however, whether or how the interaction between researchers on the supply side and policymakers on the demand side will be facilitated or hindered by the SVO in its capacity as broker in translating these themes into research projects.

Funding for educational research is expected to remain stable. The interim budget review has left the budget for educational research intact (National Budget 1992). If cutbacks prove necessary nonetheless, some shift toward international comparative or cross-boundary educational research could tighten up the national market. Dutch institutes are, however, adequately equipped to compete for contracts in the international market.

The most interesting potential development is a shift in the knowledge needs of policymakers in the 1990s. Although this has not been discussed above, it is probably true to say that there has been a shift in the pattern of demand over the years. The absence of demand for policy-related research in the 1960s was followed by an emphasis on national educational innovation projects in the 1970s. In the 1980s, research was tailored to a great variety of policy problems and measures. Partly as a counter to this, policy in the 1990s will be less preoccupied with using research findings, as indicated by the Minister in his speech during the Educational Research Days 1990 and by the deputy secretary-general, Ferdinand Mertens, at the following year's conference. Educational research occupies first and foremost an independent position, and research groups or institutes are accordingly free to make creative contributions of their own.

This means allowing scope for strategic research programs designed to accumulate knowledge, which policy may or may not make use of.

The pattern of demand is also affected by changes in education policy itself and especially in the relationship between the government and educational institutions. Greater autonomy for the latter results in a more arm's length policy, one which is more peripheral in nature, guiding rather than intervening directly in educational processes. The issues facing policymakers and, therefore, the questions that form the basis for research become broader, spanning more than one sector, and implementation becomes more decentralized.

More attention needs to be given to long-term social trends that will have an impact on education. The Minister referred in 1990 to the growing link between questions relating to education policy and demographic, economic, sociocultural and technological trends.

With regard to the basis that research has in academic disciplines, the last three decades have seen the emergence of interdisciplinary educational research, supplemented in response to the questions of policymakers by research in the fields of public administration and organizational science and even joint educational/economic projects. Further diversification of this kind is to be expected in view of the much wider scope of future policy questions, extending beyond education itself.

One last trend which has already been mentioned elsewhere is the internationalization of educational research. The unending series of questions that fall under the heading of the quality of education will be classified in international concepts, definitions and norms that can be used in several European countries. The Netherlands is one of the most active contributors to international comparative research within the OECD, the European Community and the International Association for the Evaluation of Educational Achievement. With all due modesty, the Dutch can be proud of two things: Dutch education is of a fair standard and the knowledge about our education system acquired through academic research compares in virtually all respects favorably with that in other countries. By international standards, the problem of the alignment of educational research and policy in the Netherlands—like other issues—is a rather extravagant one.

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Chapter 7

TEACHERS

AS

CRITICAL CONSUMERS OF RESEARCH

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The quest to improve research utilization in education has failed over the last three decades for a variety of reasons: abstract and otherwise unusable knowledge, lack of access, limited time necessary for follow-through, absence of linkages among different parts of the system, and so on. However, the heart of the problem as I shall argue in this chapter is the juxtaposition of two fundamentally irreconcilable conditions. On the one hand, the ever rapid expansion of problems and knowledge in post-modern society demands endless attention to innovation and continuous problem-solving on the part of teachers. On the other hand, teachers and the organizations in which they work are at best set up to deal with episodic innovation and at worst organized for the status quo.

Proposals for organizing the "knowledge system" for better use are necessary, and indeed much needs to be done on this front. Atkinson and Jackson (1992) and Wilson (1992) map out very valuable sets of recommendations in the pursuit of a more organized, comprehensive and responsive knowledge system for educational reform. No matter how sophisticated this system becomes little will be accomplished unless teachers are organized to be continuous critical consumers of new knowledge. Thus, a coordinated dual track line of development is needed: to produce better, more organized, accessible, user friendly knowledge systems; and to increase the capacity of teachers to contribute to and engage such knowledge systems as regular critical consumers for the ongoing improvement of learning. This chapter focuses on the latter problem, partly because other chapters address the larger system issues and partly also because the role of the teacher as a critical consumer seems less understood by both top-down strategists as well as by grass-roots teacher supporters.

The chapter is organized into three sections. First, I will outline briefly some basic problems that teachers face that inhibit them from becoming more engaged as critical consumers. Second, I will describe some of the main negative consequences (including some false starts) of these conditions *vis à vis* knowledge utilization. Finally, I will provide some examples and

strategies that promise to increase the capacity of teachers and their organizations to become critical consumers of knowledge.

Basic Problems

Andy Hargreaves and I recently described six basic problems that teachers face that prevent them from dealing with innovation effectively, i.e., from contending with change as an ongoing part of the job (Fullan and Hargreaves, 1991):

1. Overload,
2. Isolation,
3. "Groupthink,"
4. Untapped competence (and the neglect of incompetence),
5. Narrowness in the teacher's role, and
6. Poor solutions and failed reform.

The problem of overload

Teaching is not what it was even a decade ago. Expectations have intensified and obligations have become more diffuse. The changing composition of teachers' classes reflects society's problems and tensions. Teachers and principals are dangerously overloaded. More "social work" responsibilities, greater accountability, and having to deal with a wider range of abilities and behaviors in their classrooms are now all part of the teachers' lot. Also, because of the knowledge explosion, and because of what we now expect teachers to cover in the curriculum, the values and style of the one classroom-one teacher tradition are no longer relevant for the modern school teacher. Even if they ever did, teachers can no longer reasonably be expected to cover all areas of the curriculum by themselves.

Ironically, innovations-as-solutions exacerbate the overload problem. As if adding insult to injury, fragmented solutions, faddism and other bandwagon shifts, massive multi-faceted, unwieldy reform, all drive the teacher downward. The solution becomes the problem. Innovations are not making the teacher's job more manageable but making it worse. Overload of expectations and fragmented solutions remain the number one problem.

The problem of isolation

Teaching has long been called a lonely profession, always in pejorative terms. The professional isolation of teachers limits access to new ideas and better solutions, drives stress inward to fester and accumulate, fails to recognize and praise success, and permits incompetence to exist and persist to the detriment of students, colleagues and the teachers themselves. Isolation allows, even if it does not always produce, conservatism and resistance to innovation in teaching (Lortie, 1975).

Isolation and privatism have many causes. Often they can seem a kind of personality weakness revealed in competitiveness, defensiveness about criticism, and a tendency to hog resources. But people are creatures of circumstance, and when isolation is widespread, we have to ask what it is about out schools that creates so much of it.

Partly, privatism is a matter of habit. It is historically ingrained in our working routines. This physical isolation is also revealed in the segregated classrooms of so many of our schools—what Lortie (1975) called the traditional "egg-crate structure of schooling." Classrooms tend to isolate teachers. This is no accident. As educational historians have pointed out, the 19th century "batch-system of production," where isolated teachers taught fixed programs to age-segregated groups of children, was designed as a way of disciplining and controlling the masses. This outdated tradition of isolation has unfortunately come to be regarded as the "normal" way to teach in many schools. The habit is hard to break.

The problem of isolation is a deep-seated one. Architecture often supports it. The timetable reinforces it. Overload sustains it. History legitimates it. This widespread presence of isolation and privatism leads to safer, less risk-taking methods of teaching and to poorer standards of student achievement (Little, 1981; Rosenholtz, 1989).

The problem of "groupthink"

In response to the problem of isolation, greater collegiality is becoming one of the premier improvement strategies of the 1990s. There is plenty of evidence to show that collegiality and collaboration among teachers is indeed part and parcel of sustained improvement. Little (1981), for instance, has convincingly described how school improvement is achieved when:

> "Teachers engage in frequent, continuous and increasingly concrete and precise *talk* about teaching practice (as distinct from teacher characteristics and failings, the social lives of teachers, the foibles and failures of students and their families, and the unfortunate demands of society on the school). By such talk, teachers build up a shared language adequate to the complexity of teaching, capable of distinguishing one practice and its virtue from another ...
>
> Teachers and administrators frequently *observe* each other teaching, and provide each other with useful (if potentially frightening) evaluations of their teaching. Only such observation and feedback can provide shared *referents* for the shared language of teaching, and both demand and provide the precision and concreteness which makes the talk about teaching useful.
>
> Teachers and administrators *plan, design, research, evaluate and prepare teaching materials together.* The most prescient observations remain academic ("just theory") without the machinery to act on them. By joint work on materials,

> teachers and administrators share the considerable burden of development required by long-term improvement, confirm their emerging understanding of their approach, and make rising standards for their work attainable by them and by their students" (Little, 1981, pp. 12-13, her italics).

We continue to find two things. Collegial schools are powerful forces for change, yet they are also in the minority (Joyce and Showers, 1988; Rosenholtz, 1989). Yet paradoxes prevail and, as collegiality gets increasingly advocated, we begin to see its down side. Despite demonstrable benefits, collegiality is not without its problems, a number of which are quite fundamental. There is nothing *automatically* good about collegiality. People can collaborate to do good things or bad things or to do nothing at all. People can find themselves collaborating for the sake of collaboration. And, contrary to popular opinion, it can *reduce* innovation and imaginative solutions to individual situations, as susceptibility to the latest chosen innovation and "groupthink" carry the day. As basic psychology tells us, groups are more vulnerable to faddism than are individuals.

The unthinking self-suppression of one's own intuition and experiential knowledge is one of the major reasons why bandwagons and ill-conceived innovations flourish (and then inevitably fade, giving change a bad name).

Collegiality then, can sometimes be less an opportunity than a constraint. Instead of evolving as a valued way of working, it is sometimes imposed as an inflexible system. Working alone has its valuable moments. It is often underrated. Indeed the capacity to think and work independently (as well as collectively) is essential to reform. The psychologist Anthony Storr (1988) makes this case well in his analysis of the power and necessity of *solitude*. Interpersonal relationships, he argues, do not constitute the only path toward personal fulfillment. The capacity to be alone is a sign of great emotional maturity, "linked with self-discovery and self-realization; with becoming aware of our deepest needs, feeling and impulses" (p. 21). Solitude, personal development, and individual creativity are critical. Sorting out one's own individual stance toward improvement is just as important as deciding on collective responses.

The problem of untapped competence (and neglected incompetence)

Isolation means two things. Whatever great things individual teachers do or could do go unnoticed, and whatever bad things they do go uncorrected. Many of the solutions to teaching problems are "out there" somewhere, but they are inaccessible. However, if you open up classrooms to find excellence, you also risk exposing bad practice and incompetence. While this risk is real, the actual scale of the incompetence problem is much smaller than the fears to which it gives rise. How many teachers do you think are irretrievably incompetent? It is likely no higher than 2 percent or 3 percent. Many teachers are very effective. Their problem is lack of access to other teachers. Access would mean that they could become even better while sharing their expertise. Many other teachers are competent but could improve considerably if they were

in a more collaborative environment. If such an environment existed from the very beginning of their careers they would be dramatically better.

In sum, it is important to utilize our existing expertise and learn from each other more effectively. The message is to promote access to each other's ideas, to assume that people will improve under these conditions, and not to support those very few who, in the final analysis, fail to respond.

The problem of narrowness in the teachers' role (and the problem of leadership)

Traditionally, teaching has been a "flat" career. The only way to expand one's role was to move away from the classroom into administration. There are two fundamental problems in this tradition. First, spending many years in one's classroom without substantial outside stimulation reduces commitment, motivation and effectiveness. Good ideas and innovations developed by individual teachers are often inaccessible to others in the profession. Spending year in and year out performing the same role is inherently deadening. Twenty years of experience doing the same thing is only one year of experience twenty times over.

Second, for classrooms to be effective, schools must be effective. Teachers are a big part of the school. As individuals and groups of individuals, they must therefore take responsibility for improving the whole school, or it will not improve. If they do not then their individual classrooms will not improve either, because forces outside the classroom heavily influence the quality of classroom life: forces like access to ideas and resources, organizational and timetabling arrangements, and sense of purpose and direction. Barth (1990:131) states it this way:

> "To assert one's leadership as a teacher, often against forces of administrative resistance, takes commitment to an educational idea. It also requires the energy to combat one's own inertia caused by habit and overwork. And it requires a certain kind of courage to step outside of the small prescribed circle of traditional "teacher tasks," to declare through our actions that we care about and take responsibility for more than the minimum, more than what goes on within the four walls of our classrooms."

Related to this second issue is the problem of the gap between leaders and led. When responsibility is left solely to formal leaders, it overloads them, resulting in incorrect and frequently imposed solutions. Such a system also fails to prepare younger teachers for future leadership roles.

The problem of poor solutions and failed reform

Most attempts at educational reform fail. Neither bottom-up nor top-down strategies seem to work. There are many reasons for this failure:

- The problems themselves are complex, and not easily amenable to solutions given the resources at hand;
- Time lines are unrealistic because policymakers want immediate results;
- There are tendencies toward faddism and quick-fix solutions;
- Structural solutions (e.g., redefining the curriculum, increasing assessment and testing) are often preferred, but they do not get at underlying issues of instruction and teacher development;
- Follow through support systems for implementing policy initiatives are not provided; and
- Many strategies not only fail to motivate teachers to implement improvements but also alienate them further from participating in reform.

In short, the conditions for mobilizing teachers as a resource for reform simply do not exist. Many of us in the business of school improvement and educational change have painfully come to realize what should have been obvious over the years—that the heavy burden of responsibility for change and improvement in schools ultimately rests on the shoulders of the teachers. However noble, sophisticated, or enlightened proposals for change and improvement might be, they come to nothing if teachers do not adopt them in their own classrooms and if they do not translate them into effective classroom practice. Teachers can always shut the door and get on with what they want to do anyway. Educational change that does not involve and is not supported by the teacher usually ends up as change for the worse, or as no real change at all. In the end, it is the teacher in his or her classroom who has to interpret and bring about improvement. Where change is concerned, the teacher is clearly the key. Yet, the precise way we should do this is not at all clear. Widespread participation in decisionmaking often results in aimlessness, confusion, frustration, and burnout—a sense that we are not getting anywhere and that valuable time is being taken away from the classroom.

These six problems set the stage for a more focused discussion about teachers as knowledge utilizers. I draw out these issues more explicitly in section 2 as a transition to considering implications and strategies for action in the concluding part.

Negative Consequences for Teachers as Knowledge Utilizers

The above conditions present a variety of problems for teachers as knowledge utilizers, including the following:

- Non-use,
- Partial or superficial use,
- Misuse,
- Restricted use, and
- Promising but limiting use.

Non-use is straightforward. It concerns those teachers, who for a variety of reasons are not involved in trying out new practices of any kind. The percentages vary by context, but it is likely to be a sizable group. Under conditions of overload and isolation or otherwise through low motivation many teachers spend much of their careers unengaged in grappling with new knowledge.

Partial or superficial use relates to the problem of implementation which has now been well documented (Fullan, 1991a). Knowledge utilization involves *learning* something new. In the area of curriculum, for example, it usually concerns:

- New material,
- New skills or practices (e.g., teaching strategies), or
- New beliefs or understandings.

Research shows that it is much easier to "use" new materials on the surface, than it is to develop the skills and practices associated with those materials, and harder still to acquire the deeper understanding in order to make more defined judgments about their use and impact. Most approaches to introducing new practices are not strong or sustained enough to go beyond surface use. Indeed, it takes a sophisticated staff development design and execution to obtain substantial knowledge use (see Fullan, 1990). Put another way, the conditions of teaching described in the previous section are not conducive to the continued interaction and development-in-use required to obtain thorough implementation.

Misuse is more debatable and perhaps subjective, but it goes to the heart of "critical" consumption. In my view, the greatest problem faced by school districts and schools today is not non-use or resistance to innovation, but the fragmentation, overload, and incoherence resulting from the uncritical and uncoordinated acceptance of too many different innovations. Thus, misuse includes:

- Adopting an innovation that is wrong for the situation;
- Adopting too many innovations that either cannot be managed at once or are unintegrated; and
- Adopting an innovation that is potentially useful but which is insufficiently developed (i.e., how to make it work in practice has not yet been adequately considered).

Clearly, groupthink and poor solutions are central here. With all the pressures on teachers and schools to do something, and with all the (however well intentioned) political policy strategies at state and district levels, misuse—actions which make the situation worse, not better—is likely.

I use the term "restricted use" to refer to pockets of success in relation to particular innovations. To implement a valuable innovation successfully is no small feat. Cooperative learning, and reading recovery are two such examples, partly because they are proven, well worked out innovations, and partly because they are accompanied by strategies of staff development and support which makes successful implementation more likely. Thus, the content and process of change are integrated. My main point is not to question these valuable additions but to raise a question of perspective in two respects: First, in instances of initial success do these innovations last (i.e., the institutionalization problem) beyond their initial proponents? Second, and more fundamentally in situations where given innovations are working well—are they indicative of a wider stance to knowledge utilization for continuous improvement, or is the effort confined to single, however powerful, innovations?

In moving to the "promising but limiting use" issue, this is an appropriate time to signal a paradigm shift, namely, from a single to a multiple innovation model (Fullan, 1990; Fullan, 1991). The vast majority of studies of innovation, and for that matter of knowledge utilization, have worked on the assumption that the problem is to make available an array of promising innovations while figuring out how adopters can access and be supported in the effective use of these programs and ideas. However, schools are not in the business of implementing single innovations one at a time. They are dealing with multiple innovations simultaneously. For the latter, we need a different mindset—one that promises to address overload and multiplicity in a more coherent or organic way.

I take four somewhat different examples of approaches that promise to address coherence, but are nonetheless limiting in their present form (although as we shall see they do provide elements of a more complete approach as discussed in Section 3). The four are:

- Teacher narrative,
- Action research,
- Collaborative work cultures, and
- Restructuring.

I do not have the space to provide a detailed critique, but the gist of the problems can be briefly outlined.

Teacher narrative (Connelly and Clandinin, 1988) and action research (Oja and Smulyan, 1989) are different, but they both represent a strong endorsement of the phenomenology of the teacher. They are, therefore, much less likely to fall victim to the problems of superficial use,

misuse, or restricted use. There is little evidence that teacher narrative worries about, let alone engages in, the wider knowledge base of innovative ideas. The press for engaging new knowledge is less important than sorting out personal knowledge, life histories and immediate circumstances. Given the poor track record of innovation and knowledge use, preoccupation with narrative may be a better use of teacher time and energy, but it does not lead to proactive, continuous knowledge development.

Action research does address new knowledge by virtue of its inquiry orientation to questions of importance to teachers and their collaborators. As it has evolved one has little evidence of its impact beyond the individuals engaged in a particular investigation. Ward *et al.* (1992)—one of the original advocates of collaborative action research—draw this telling conclusion about the current state of action research:

> "Teacher participation in R&D appears to have moved away from our original concern about both the utility and rigor of work that is done, to a heavy emphasis on doing it within a single classroom or school" (p. 3).

They ask the following unanswered questions:

1. Research Questions

   (a) Are teachers and school teams around the nation focusing on the same issues?
   (b) Are they sharing findings?
   (c) Is anyone doing a constant comparative analysis of the information they obtain?
   (d) What breakthrough findings have they gained at their respective sites?
   (e) Have we developed any research-teacher "gurus"? Are they still in the classroom?

2. Curriculum Questions

   (a) Have individual teachers or action research teams created any new curricula? Who else knows about it? Who else is using it? Is it working with students whose needs we have had the most difficulty meeting? How do we know?
   (b) Have textbooks been redesigned by individual teachers or action research teams? Have teachers or teams who have done this been hired by publishers to make the materials available to schools more appropriate?

3. Teacher Development

   (a) What parts of teaching have become more visible because of the action research that has been done?

(b) Are any individual teachers or action research teams seeking ways to make the complex, sophisticated way expert teachers deal with teaching and learning obvious to others? Have they developed ways to build these capacities in other teachers?

4. School Development

(a) Do schools operate differently as a result of action research done by individual teachers and teams? How? Are there common improvements across sites that were created in response to similar problems? Or, are all improvements context-specific?
(b) Is research and development work an add-on or an integral part of teacher and other practitioner positions?

5. Questions Based on Rigor Issues

(a) Are participants in today's action research trained in research and evaluation methodology?
(b) Are "external" friends used to provide outside perspectives?
(c) At any point in the process is attention given to what it would take to transfer new approaches, structures, curriculum, teaching strategies to other sites?
(d) Is any attention given to what is and is not transferable?
(e) Do participants ever ask how could we do this better?
(f) Do participants ever ask whether they are asking the right questions?
(g) How often do practitioners involved in research ask if the work they are doing truly is better than the work others are doing, including university professors, school district evaluators, and so forth? (Ward *et al.*, 1992, pp. 3-4).

A third promising but limiting line of development concerns collaborative work cultures. Rosenholtz's (1989) analysis of "stuck" (learning impoverished) and "moving" (learning enriched) schools in her sample of 78 elementary schools demonstrates clearly the power of collaborative work cultures, which are characterized by teachers and principals committed to:

- Working together,
- Continuous learning,
- Developing shared goals,
- Greater teacher certainty,
- Greater teacher commitment, and
- Increased student learning.

Little (1981), as we saw earlier, found that norms of collegiality and experimentation characterized some schools, but not others. Hargreaves and I also analyzed in some detail the

power of collaboration for continuous improvement. We also, as discussed earlier, cautioned against seeing collaborative work cultures as a panacea (Fullan and Hargreaves, 1991; see also Little, 1990). People, as we have said, can collaborate to do nothing, or to do the wrong thing. Contrived collegiality, groupthink and other forms of unproductive collaboration can actually reduce innovation. Furthermore, highly collaborative internal relationships (i.e., within a school) are not necessarily linked to high involvement with external sources of ideas which would be necessary for long-term continuous improvement.

Restructuring is the fourth promising but limiting attempt at improvement. Levine and Eubanks (1989) draw the following conclusion:

> "As the empowerment movement has coalesced and spread rapidly during the past few years, researchers have begun to assess outcomes in districts which have been early adopters of one or another approach to site-based management and enhanced faculty collaboration in decision-making ... research-to-date generally has reported conclusions that appear to be more neutral and disappointing than positive and encouraging" (p. 8).

There is little evidence as yet that restructuring efforts can focus on *instructional* improvement (as distinct from or in addition to governance) in a sustained manner. Put differently, continuous knowledge utilization either of promising instructional developments or of knowledge of the change process has not been a feature of restructuring efforts, although there are some recent exceptions (e.g., Lieberman, Darling-Hammond and Zuckerman, 1991).

In sum, even the promising lines of development are piecemeal. They contain pockets or elements of success, but they also suffer from glaring limitations. The teacher as critical consumer of research, both in understanding one's own self and situation, and in reaching out to a wider body of knowledge as a matter of course is a missing centerpiece.

Implications and Strategies for Action

The theme of this chapter is that there must be a dramatic increase in the capacity of teachers to be critical participants in research knowledge if the best of knowledge is to be utilized for continuous improvement. In general, I see three interrelated aspects of this involvement:

- Drawing on research,
- Conducting research, and
- Disseminating back to the research and practice base.

This does not mean that researchers would cease to conduct research. On the contrary, the stronger the capacity of teachers to be critical consumers (i.e., to hold their own in the research domain) the more rigorous the products of research must be. Thus, strengthening the quality and accessibility of the knowledge base system is essential.

In this chapter I can only outline some of the elements of what it would take to develop teachers' capacities to be active participants in evolving research developments. Using an amalgam of illustrations and recommended strategies, I see implications at several levels: teacher and school, school district, and universities—especially teacher education. The following recommendations must be worked on as a set. It is only the *combination* of developments that will have an impact.

Teachers and schools

There are fundamental implications for both the role of teachers as individuals, as well as for schools as collaborative work cultures. In terms of the role of teachers, we have been working in Toronto, on a conception (and practice) of teachers who can combine moral purpose with the skills of change agentry. At the individual level, we see four core capacities (Fullan, in press):

- Personal vision-building,
- Inquiry,
- Mastery, and
- Collaboration.

The combination of these capacities integrates purpose (vision-building), constant seeking and testing of better knowledge (inquiry), skill development (mastery), in a highly interactive manner (collaboration inside and outside the school). We see teachers as individuals having the responsibility to pursue these capacities (so to speak, despite the organizations they are in); while at the same time restructuring schools to press and support these developments. In other words, one (the individual) cannot wait for the other (working conditions) and vice versa.

An example of this agenda can be seen in our 12 strategies for teachers, and 8 strategies for principals in *What's Worth Fighting For in Your School* (Fullan and Hargreaves, 1991).

Teachers

1. Locate, listen to and articulate your inner voice.
2. Practice reflection in action, on action and about action.
3. Develop a risk-taking mentality.
4. Trust processes as well as people.
5. Appreciate the total person in working with others.

6. Commit to working with colleagues.
7. Seek variety and avoid balkanization.
8. Redefine your role to extend beyond the classroom.
9. Balance work and life.
10. Push and support principals and other administrators to develop interactive professionalism.
11. Commit to continuous improvement and perpetual learning.
12. Monitor and strengthen the connection between your development and students' development.

Principals

1. Understand the culture.
2. Value your teachers: promote their professional growth.
3. Extend and express what you value.
4. Promote collaboration; not cooptation.
5. Make menus, not mandates.
6. Use bureaucratic means to facilitate, not to constrain.
7. Connect with the wider environment.

Each of the strategies listed above is accompanied by a discussion and set of ideas about how to enact the recommendation. For example, for "reflection in, on and about action" seven ideas are listed for: evoking positive personal images, professional reading, professional dialogue, teacher support groups, teacher research, autobiographies and life histories, and advanced coursework.

A powerful example is also provided in some of the work of the teachers in the Coalition of Essential Schools, which is producing good research in its own right as well as guidelines for others (see especially, McDonald, 1992, and Wasley, 1991). Wasley, for example, recommends that administrators and teachers work together on six components:

1. Teachers and administrators should work collaboratively over the course of a school year to generate several proposals for instructional improvement.
2. The faculty should engage in a series of focused discussions as part of their year long investigation.
3. The faculty should be asked to assess the benefits of the year-long discussion.
4. A final report should be prepared that combines the strongest suggestions from the four groups, including processes for selection and evaluation.
5. Establish a budget with appropriate release time.
6. In the last month of school, the faculty should engage in some process suggested by the facilitators for selecting one or two of their options for the next year (Walsey, 1991: 173-177).

Similarly, McDonald (1992) in analyzing the endemic uncertainty and complexity of teaching recommends that teachers "learn to read teaching," "to read the school," and "to read the profession." What I find underdeveloped in these accounts is an insufficient press "to read research" or otherwise to engage research knowledge more explicitly.

Schools and districts

The Learning Consortium in Toronto provides a good example of school districts and their schools grappling with the problem of establishing long-term change capacity (Watson and Fullan, 1992; see also Lieberman *et al.*, 1991). The Learning Consortium is a teacher development partnership formed by four large school districts, and two institutions of higher education. In its fourth year, the partnerships is based on two assumptions:

- Teaching means career-long learning and
- Teacher development is inextricably linked to school development.

With these two premises the Consortium set out:

- To plan and initiate new programs that incorporated the two basic assumptions;
- To monitor and document these program developments; and
- To engage actively in the growing knowledge-base on teacher development and school improvement by drawing on it as well as contributing to it through dissemination.

The districts have used the Consortium for both short-term purposes such as focused inservice and implementation of new programs and ideas (for example, cooperative learning), and for middle to long-term development including new approaches to preservice teacher education, induction, selection and promotion criteria, teacher appraisal and development, school-based planning, leadership development, and student assessment. We still see the Consortium as only representing the beginnings of a deeper quest, but there is no question that there has been a greater awareness of and involvement in the three faces of research knowledge with which I began this section—drawing on, conducting, and contributing to the research knowledge base.

Universities and teacher education

Teacher education and colleges of education by and large have been laggards rather than leaders of reform (Goodlad, 1990; Fullan, 1991a). Since knowledge and inquiry are presumably universities' forte it is ironic that they have not been leading the charge. Teacher education is clearly one of the critical keys in developing teachers' capacities to engage actively in the research domain. We are beginning to see some movement in this direction. Among other issues a concerted effort is needed in the following areas:

- Faculty development of the professoriate;
- Revamping of preservice programs with an explicit emphasis on teacher as learner and inquirer;
- Collaboration and partnerships within the colleges of education, between colleges and other parts of the university, and with school districts and other agencies;
- Focus on the entire teacher education continuum;
- Linking teacher development with restructuring of schools and corresponding restructuring of districts and colleges of education; and
- Preoccupation with research knowledge and investigation for the improvement of practice and the profession.

An illustration of some of the directions is contained in a 10-point agenda for the hypothetical "Best Faculty of Education in the Country" (Fullan, 1991b):

1. Commits itself to producing teachers who are agents of educational and social improvement;
2. Commits itself to continuous improvement through program innovation and evaluation;
3. Values and practices exemplary teaching;
4. Engages in constant inquiry;
5. Models and develops lifelong learning among staff and students;
6. Models and develops collaboration between staff and students;
7. Is respected and engaged as a vital part of the university as a whole;
8. Forms partnerships with schools and other agencies;
9. Is visible and valued internationally in a way that contributes locally and globally;
10. Works collaboratively to help develop provincial and national networks.

Much of the agenda in other major reform projects in teacher education is directed toward similar developments (Goodlad, 1990; The Holmes Group, 1990; and Howey and Zimpher, 1992).

In conclusion, none of what I have said diminishes the great need to revamp the knowledge base system (Atkinson and Jackson, 1992), to make it more driven by designs and strategies that are systemically powerful (Wilson, 1992), and to make existing research more usable to teachers (Huberman, 1985). What I have said is that these efforts will be for nought without a corresponding dramatic increase in the capacity of teachers and the organizations in which they work to be actively and critically engaged in the knowledge generation and utilization enterprise. This is tantamount to a fundamental change in teaching as a profession, and in the settings that affect teachers.

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Chapter 8

NEAR THE CHALK FACE:

NEW APPROACHES TO RESEARCH FOR EDUCATION RENOVATION

by

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This chapter reviews conceptual questions about the creation and utilization of knowledge and relates these issues in the sociology of knowledge to three types of education research: positivist, "quick and dirty," and teacher-based research. It makes a plea for participatory action research focused on the excluded.

Paradigms of Knowledge and Practicalities of Research

We are gathered at this seminar to address practical questions about the organization of a research effort. Nevertheless, I want to start with an issue in epistemology. It has been said there is nothing so practical as a good theory. To understand policy options about research we must be willing to face conceptual questions about the nature of the knowledge being produced by that research.

Research is the process of producing knowledge, thus, a kind of industry. There is a labor process: what researchers do. There is a work force: who researchers are. There is a distribution and consumption process: how the knowledge is circulated and how it gets used.

The sociology of knowledge tells us that these processes are shaped by institutional and cultural structures. Knowledge is a social product not in a vague metaphysical sense but in hard and intrusive detail. What is known, by whom, about whom, with what effects—these are social, indeed, political questions.

To say this is not to say, as some skeptical epistemologists suggest, that *truth* is eliminated as an issue, or becomes an effect of power. I don't go all the way with Foucault; I think that truth is in many circumstances a subversive force that disrupts power and knowledge regimes. If it were not, we would not see so much energy expended by governments and corporations in controlling truth.

But Foucault's investigations (for example, Foucault, 1977), and those of the feminist epistemologists who have recently and stunningly displayed the gender sub-text in the hardest of hard science (for example, Keller, 1985; Bordo, 1987), should alert us to the social underpinnings of different paradigms of knowledge. Kuhn (1962) made us familiar with the idea that knowledge in a given field may be organized in different and incompatible ways, according to rival paradigms. We now need to connect this insight, more firmly than Kuhn and the philosophers have been able to do, with the analysis of research as a production process and with the consumption of its products.

There are, we might say, socio-epistemological options for the organization of any field of knowledge at a given time. Which possibilities for the organization of the knowledge-production process are realized in research practice is, at one and the same time, an epistemological and a political issue. There are choices about the making of knowledge, but the choices are not innocent and are never simply technical.

Three Types of Educational Knowledge and Research

1. Positivist

The dominant style of educational research at present has the aspiration of creating a scientific basis for educational practice. The highest prestige is accorded to basic or fundamental research intended to advance this science. The methods of highest prestige are controlled experiment, or statistical analysis that approximates experimental control. Science itself is understood through a positivist epistemology, as the production of empirically based generalizations which, after testing and verification, can be applied by practitioners.

This positivist model is hegemonic in Western style education systems, providing the commonsense background to most discussions of research. It provides the groundwork, for instance, for the distinction between basic and applied (or instrumental) research that was part of the planning for this international seminar.

The institutional bases of positivist research are the universities and research institutes. Its rise to dominance in educational discourse was intimately bound up with the growth of a professionalized research work force—produced by graduate departments of education and psychology (and to a lesser extent sociology, economics, statistics); employed by universities on research grants, by research institutes, or by research offices in education systems. A high level of specialized training is required particularly in order to understand and apply the formal measurement procedures and approaches to statistical analysis that are central features of the research style.

Positivist epistemology, professional training and institutional base combine to produce a high level of abstraction in the research that is professional. This is not an error or an

aberration, it is inherent in the goal of an educational science based on the broadest possible generalizations. It is characteristic of papers in educational research journals to frame their conclusions in universalized terms, about learning, resources, or instruction in general. It is quite common in journals reporting educational research that the exact time and place of the research goes unreported, so unimportant is such concrete detail considered.

With this abstraction goes an absolute separation between the producers and consumers of knowledge. School teachers do not engage in research, while researchers do not teach in schools—though many researchers have been teachers at an earlier stage of their careers.

School teachers do not have much say in this, as they do not fund the research. But governments do, and in this relation lies one of the key difficulties facing positivist research. The ambition to produce a generalized science is at odds with the practical exigencies of running an education system. For this, administrations mostly need particular, local information; such as the demographic projections for a given region, the training and skills of a teaching work force, the pattern of subject choice, and the current state of the curriculum.

Administrators in their offices (like teachers in their classrooms) mostly have a perfectly good practical knowledge of how to run a school system. They do not need an abstract science of education (or of management, for that matter) to tell them what to do. Hence their often-expressed irritation at the irrelevance or uselessness of most of the knowledge produced by academics in the name of basic research. Hence periodic attempts to use the financial power of governments to re-mould the production of knowledge closer to the practitioners' desire.

To take the case of Australia: in the 1970s the federal government in Australia put education research funds into an Education Research and Development Committee. Education was then the only academic field to have its research funds specifically designated research and development. In the late 1980s a much broader attempt was made to shape all public research funding around designated national goals. This provoked fierce complaints from the universities about an attack on academic freedom. Significant amounts of new education research money were kept out of even this revamped research granting structure and put directly into government-commissioned projects.

II. Quick-and-dirty (QAD)

Given all this, it is not surprising that another genre of research has grown up to meet the needs of educational administrators and policymakers. This does not challenge positivism so much as it does stand beside it in the spaces positivism does not fit. It has no well-recognized name; following the pungent description of a practitioner I know, I will call it QAD research, for 'quick-and-dirty' data gathering.

Bob W. Connell

QAD research probably accounts for at least as much data-gathering activity as positivist educational science, though it is harder to observe and account for since most of its results are never published. Its institutional base is the administrative apparatus that runs education systems: ministries, regional offices, local boards, and principal's offices. Its work force is mainly the administrators themselves (often the second-echelon administrators who are delegated by unit heads to get the facts on such-and-such an issue). They are sometimes assisted by professional researchers from a departmental office or a research institute, but most often do the job themselves, using their background knowledge of the education system they work in, and some rough-and-ready ideas of research practice.

When a given head office sends out a form to be filled in by the regions, or the regional office tallies the schools offering such-and-such a program, or a principal decides to send a survey home to parents, this is QAD research. Its methods often include shorthand versions of positivist research methods, for example, quickly constructed questionnaires sent out with little or no pre-testing. But they also include data-gathering techniques quite inadmissible in the academic approach, such as ringing up some knowledgeable person and asking her what the score is.

Sometimes academics are called upon to do this kind of research—as I have been—and they are likely to find the experience disconcerting, if not distressing. The timeframe in QAD research is likely to be days or weeks, where in academic education science the timeframe is measured in years. One would still be pre-testing the instruments for an academic study at the time a QAD study is all wrapped up and the policy decisions are history.

An academic is likely to see this as undue haste producing research of poor quality; but I want to suggest another view. QAD is a knowledge production process organized on different institutional bases and from a different point of view. The research can be perfectly good with respect to the institutional practice in which it is used, though it is no good at all from the perspective of producing a generalized science.

The real problems it raises are about the shaping of the administrative agendas to which QAD responds, and the control and distribution of the knowledge produced. For administration is no more a disembodied technical process than research is. Administration has its own politics. As Yeatman (1990) and Pusey (1991) have recently shown for the Australian case, reform agendas moving through administrative structures can reshape conceptions of problems and available solutions quite dramatically. The recent impact of the ideology of economic rationalism on educational policymaking in Australia is a striking example of how disputable administrative common sense can be.

III. Teacher-based

So far little has been said about classroom teachers, and that accurately reflects their place in most research agendas. Teachers are, of course, the *objects* of positivist research, in a body of work on teaching styles, instructional methods, etc. More exactly, teachers as persons and as workers are not the objects of research, rather they are the bearers of the *variables* which are the true objects of knowledge. But they are not the authors of positivist research, except when they step outside their classroom jobs and sign up for MEd or PhD theses. And they are not usually the authors of QAD research, except when they are promoted out of the classroom to administer schools, to chair committees, etc.

This absence from research agendas reflects the usual view of teachers, which sees their work basically as *implementing* something decided elsewhere—whether scientific conclusions about instruction, or system prescriptions for curriculum, or societal values, or whatever. In this view, teachers *consume* research knowledge, as validated by academics or in the form of administrative decisions but have no other relationship to research. But if we take a more industrially realistic view of teachers, and investigate their actual labor process and the social conditions that shape it (as is done in recent investigations of teachers as workers, for example, Apple, 1986), then a different relation to knowledge appears.

In the nature of their work, teachers gather a great deal of knowledge. Part of this is curriculum knowledge. Syllabuses and other curriculum documents, however expertly prepared, can only be guides. Like the famous cook book that presupposes someone who knows how to cook, curriculum documents presuppose someone who knows how to teach. Knowing how to teach includes having methods for expanding documentary guidelines into day-by-day, minute-by-minute sequences of interaction. Assembling materials, finding relevant examples, and finding connections between different items and types of knowledge are all part of teachers' everyday work.

Another part of the knowledge teachers gather is about their pupils: style of learning, levels of information, current skills, motives and emotions, friendships, family backgrounds, personal problems, and so on. Most of this information is gathered on the run in the everyday work of the classroom. Sometimes this is supplemented by more formal procedures of assessment and evaluation, depending on the micro-technologies available in the school, the time and energy available to use them, and so on.

In more formal terms, what we see here is a knowledge-production process that is reflexively integrated into the practice of teaching. Teachers discover and produce relevant knowledge in an ongoing way in the course of their labor process. For the most part this is an un-named and un-theorized process. It is not called research and (except in the shape of formal assessment of pupils) is not much discussed in teacher training.

At times, however, it can become more visible; and this is most likely to happen when a group of teachers are facing a situation that calls in question many of the routines of teaching. Such a situation is teaching in a context of severe poverty. In this case a conscious, joint process of producing and discussing practice-relevant knowledge may develop at the school level as it has, for instance, in the Disadvantaged Schools Program in Australia (Connell *et al.*, 1991).

These are certainly not the only forms of educational research, but they are, I think, the main ones at present. They define the field we have to think about in considering the redesign of educational research planning and support. The two issues that emerge most clearly from this discussion are about the research work force and about the relation of knowledge to practice. I will discuss these in turn, and then raise the question of forms of knowledge and types of practice that can be found beyond the mainstream addressed in current discussions.

The Research Work Force

The most visible sector of the research work force for educational science is the academic staff or faculty of universities. The conditions of work in universities are highly relevant to the kind of research that comes out of them. The academic career path is open mainly to people who are able to produce a stream of research reports in refereed journals, or books which are well reviewed in such journals. Reviewing and refereeing are accountability mechanisms which tie the work of academics into the scrutiny of other academics and heavily discount the evaluation of their work in other forums. Anyone who has sat on an academic appointment or promotion committee and has heard the devastating effect of epithets like "journalistic," "anecdotal," or "impressionistic," will know what I mean. Such language, in the case of education studies, precisely emphasizes the hegemony of positivist knowledge production over QAD and teachers' practical knowledge.

I do not wish to open the door to academic-bashing any more than to teacher-bashing; there are good reasons why academic work should have a considerable degree of autonomy. We should also bear in mind that many education academics have been school teachers and administrators and have a personal awareness of the issues that teachers and administrators face. Education studies do not float free. Nevertheless academic autonomy, realized as it is in a particular institutional structure of career-making, with the particular economy of university life (notably its lack of support services and its striking lack of long-term guarantees of resources), and with the hegemony of positivist models of knowledge, pushes strongly toward an abstracted conception and practice of research.

How can this weakness in education research be overcome without destroying the capacity for independent analysis which is the main point of having research institutes within a university in the first place? The problem is multidimensional and certainly not susceptible of instant solutions. However, I think two directions are clear.

First, we need research funding structures that encourage links between particular groups of academics and particular groups of schools. In the Boston, Massachusetts area one of the universities has assumed the responsibility for the management of a whole local school system, which seems to me to be valuing academic expertise a little too high—and more importantly, lands the university in question automatically on the management side of industrial relations with teachers and issues with parents. But without getting into that bind, a lot more could be done to construct long-term organic relations between researchers and schools. This could key research in more closely to the developing practical issues at the chalk face and give teachers a greater chance to set research agendas.

Second, we need to address the question of publication and recognition of academic work. The vehicles for academically respected, career-relevant publication are in fact very narrow. There are many journals but mostly of the same kind, mostly with very small circulations, mostly with no readership among teachers and no impact on policymakers. I think the conditions of prestige and recognition of research among academics *can* be changed, to the extent that forums and vehicles are created which provide for scrutiny and testing of the research in practice by practitioners, as well as by other academic researchers. A diversification (rather than a simple multiplication) of channels is needed. I would argue that a designated part of public research budgets should be invested in dissemination, that is, in the creation and development of means of communication of and about research. Later I will make some more concrete proposals about this.

For another key part of the research work force, the salient problem is not recognition and advancement so much as survival. Most of the research labor done in universities and in many research institutes is done by temporary workers on soft money: graduate students, part-time research assistants, fixed-term contract employees. These are the people at the "coal face" in research who do most of the personal contact, live on the job, get most of the tacit knowledge about what is really going on. Rough stability in overall education research budgets means that there is always a certain volume of this work available. But the parceling-out of most of this budget from year to year on a project-by-project basis means massive instability and uncertainty for individual workers. They are dependent for offers of work on academics or research administrators who have budgets; research assistants do not themselves apply for research grants and would not get them if they did.

We must then acknowledge that a key part of the research work force operates under appalling industrial conditions, with frequent changes of task and supervision, no job security, and no clear career path. This is not exactly likely to encourage bold, creative and independent thinking. Our research funding practices produce the paradoxical effect that the part of the work force which is most likely to have intimate practical knowledge of the production of knowledge is least likely to influence the planning and design of research and has no incentive at all to think about research in a long-term way.

I think this is one of the key mechanisms depressing the quality of professional research, and that it urgently needs attention. Individual institutions (for example, particular university departments) often try to do something about it locally (for example, by trying to make sure key research staff have a regular flow of offers of work). But the issue is much larger and needs to be addressed at the policy level. The best sources of ideas, information and practical solutions on these issues are the unions covering research staff. Accordingly, research policymaking structures should automatically include these unions on a permanent basis.

For yet another part of the work force—school teachers—the problem is getting the research element of their work recognized at all. Industrial agreements specify preparation time, and that is about as close as it usually gets. Research training is not normally part of teacher training programs, let alone research reporting.

Yet teachers are, I have argued, producers as well as consumers of knowledge. They are particularly important producers if we are thinking about the renovation of education, since teachers are key actors in school reform and their production of knowledge is so closely connected to teaching practice. So, a comprehensive research policy needs to give thought to how teachers can be developed as researchers, what kind of support they need, and how their work can be circulated and scrutinized.

It helps to consider the school as a research community and to ask how the institution may be made more effective in this field. In many cases the knowledge that teachers acquire goes no further than their own classroom. So, one of the key moves is to create forums where this knowledge can circulate and to organize schedules to make this circulation possible. The minute-to-minute daily pressure of teaching (a matter of teachers' folklore, documented in recent research on the labor process of teaching) is a powerful constraint on teachers' capacity to organize and circulate their knowledge. In response to it, one school in the Disadvantaged Schools Program used special-purpose funds to provide internal release for a staff member, constituting her as the staff's research agent for a planned renovation of assessment practices (see Connell *et al.*, 1992).

This "barefoot doctor" model of research has in my view great potential. It is flexible, can be short or long term, and is applicable to an enormous range of problems. It locates the production of knowledge close to the point where it will be used. But to realize this potential the approach needs to be supported at system level, and by professional researchers. Research funding structures need to be created that can be accessed by schools, and practical support must come with the funds. Frameworks and procedures need to be thought through. Positivist research paradigms are of little use—may even be counterproductive, setting up norms that are impossible to realize in the practicalities of school life. QAD experience is more relevant but typically follows an administrative agenda. The methodological models of most relevance are the procedures of reflexive community research that have been developed more in the welfare, social policy and community development field than in education. Readable accounts of these

methods exist (notably Wadsworth, 1983, 1991; Kemmis and McTaggart, 1988) and deserve wide circulation among educators.

Finally, we need to consider how teacher-produced knowledge can be circulated between schools, as well as within them, and be subjected to scrutiny and debate. I take such scrutiny to be an essential component of any knowledge-creation process that is seeking to do more than reproduce traditional ideas, hence, an essential component of both science and social critique. Habermas' (1971) observations on the "ideal speech situation," Popper's (1959) model of the advance of science by conjecture and refutation, and Dewey's (1916) concept of education as cultural critique and renovation are all relevant here.

This too is not something that will readily happen in conventional research forums (though I would certainly favor opening up academic journals to the work of teachers). There is perhaps more potential in the kind of publication that already has an audience among teachers around issues of practice, ranging from union journals through subject association magazines to system gazettes and general-purpose magazines. Some teacher research is already published in these media.

Participatory Action Research and How to Support It

The problem of abstraction has to be addressed by re-thinking research from the point of view of the practice it informs; the problem of narrowness by democratizing the processes and diversifying the people involved in the production of knowledge. The combination of these two directions leads toward what Wadsworth (1983) has called "participatory action research" (PAR).

Built on a reflexive rather than a positivist epistemology, PAR starts with a group (for example, a school, a community organization, or a group of health educators) and works from their actual practice to define their needs for knowledge. It then seeks to mobilize and expand the group's own capacities for research, to build data gathering and interpretation into its own work. It tries to set up feedback loops between practice and research which are unmediated and continuing.

If this sounds like a prescription for amateurism, it is not. Professional researchers are involved in setting up the process and in designing and conducting the work. But their relationship to the groups involved is different from the researcher/subject or researcher/consumer relation in positivist and QAD administrative research. Decisions are made by negotiation between specialist researchers and the "critical reference group," as Wadsworth calls it. The researcher functions to a significant extent as a community educator, disseminating her expertise as widely as possible. When the results of the research are compiled, the primary audience to be addressed is the critical reference group (and other people in a similar situation), so the form of reporting is shaped by the practice involved.

This general approach allows for wide variation in the scale of research, in the details of the relationship between professionals and critical reference group, and in the ways research is linked to practice. At this point, I will take my own advice about concreteness and talk about a large-scale PAR project I have been associated with in AIDS prevention education.

In the early 1980s, a new disease was identified which was fatal and was spreading in epidemic fashion. It was eventually named AIDS and linked to a particular virus now called HIV. The disease was first identified among communities of urban gay men in the United States and other Western countries, including Australia. The main means of transmission identified among this group was anal sexual intercourse. During the 1980s, HIV was also shown to have spread on a massive scale in central Africa by heterosexual intercourse; to be widespread among health care workers in areas in Southeast Asia; and to be spreading among injecting drug users.

Because AIDS was publicly identified as a disease it was officially treated as a *medical* problem; the epidemic is, so to speak, owned by the medical profession. So WHO, not UNESCO, coordinates the international response to AIDS. In Australia, research related to AIDS is funded through departments of health. Yet, in the absence of a medical cure, many people would agree that the main response to the epidemic must be *educational*. Prevention work centers on the attempt to educate groups who are regarded as at risk of infection by HIV. One consequence is an educational research and development effort coordinated and funded by institutions which have little background in education and no established education-research routines.

The first proposals for prevention were very much in a medical mold: individual behavior change, with the patients following rules of abstinence laid down by an authoritative medical voice. The research effort launched in support of this was positivist KAB (knowledge, attitudes and behavior) surveys. It will not surprise educators to hear that this effort at direct instruction had little success.

A much more effective strategy was generated by gay communities themselves. This centered on the idea of safe sex and involved a grass-roots educational process which was at the same time a process of community development (Watney, 1990; Dowsett, 1990). Guidelines for sexual practice that prevented HIV transmission were hammered out and disseminated by a range of organizations and networks, many of them freshly created in the AIDS crisis. Peer counseling networks, discussion groups, and support groups were set up; publicity campaigns were mounted using mass media and gay community venues; and a sustained attempt was made to create a safe sex culture as a core part of gay community life. In Australia, this process occurred with government support, under the direction of a clear-sighted and unprejudiced Minister of Health; this unfortunately has not been the case in many other countries.

A research effort that would support this self-generated educational process could not follow positivist lines; and something very different from QAD administrative research was

required by a grassroots movement. The Social Aspects of Prevention of AIDS (SAPA) project is an example of a response to this situation by collaboration between gay community educators and professional researchers (Kippax *et al.*, 1992).

The initiative for the project came from educators at the AIDS Council of New South Wales, the main community organization in the field, who were already mounting prevention campaigns but needed systematic information about sexual practice among gay men. A university-based research group produced an outline research program, which was developed in discussions with gay community educators; funding from government was managed by a joint steering committee. Interview schedules were developed jointly, tried out by gay community activists, then edited and administered by the professional researchers. Interviewers were mainly recruited from the gay community, then trained at the university by the professionals. Data analysis was done at the university, according to an agenda largely set by the expressed information needs of full-time community educators. Findings were reported directly to the educators in a long series of consultations, seminars, training sessions, written reports and conference presentations. Academic publication *followed* this circulation of findings among practitioners.

One of the major problems identified in the first round of SAPA survey work was the social-class selectiveness of the audience for programs based in the so-called gay community-based programs. Working-class men are seriously underrepresented. Class selectiveness is a familiar issue in school and university systems; in fact, it is one of the major structural issues about them. In a later stage of the SAPA research, this was addressed in a research-and-curriculum-development project among working-class men. Here there was no pre-existing critical reference group. The project itself attempted to constitute groups that would reflect on their own experience, valuate existing education materials, and experiment with peer-education techniques. Not surprisingly, this has been easier to do in settings where a reasonably well-defined social network with an informal safe-sex educational practice already existed than in settings with greater alienation and isolation (for details, see Connell *et al.*, 1991).

These are just a few points from a complex but inspiring research experience. In broad terms, what was going on in the AIDS field was the grass-roots creation of an adult education curriculum through a combination of science and cultural critique (very Deweyan!) and the creation of institutions and networks through which that curriculum could operate. It proved possible to define a research process that would help develop and implement that curriculum, which was both credible to funding agencies and substantially controlled and implemented by community organizations. The traditional gap between producer and consumer of knowledge was to a large extent overcome in a production process organized around an urgent practical need.

This is not for a moment to suggest that the process was trouble-free. Professional researchers' need to have a body of data thoroughly analyzed clashed with educators' need for quick guidance, however imperfect. The project was criticized in its first years for lack of

academic publications. Connecting community-generated research to governmental policymaking is difficult. Reflecting on these problems, and on other experiences with participatory research, suggests two main issues about the support structures needed to develop such research on a larger scale.

The first concerns decentralized research funding. To stimulate a broad spectrum of PAR projects requires a broad distribution of funds and a relaxation of central control over their awarding and use. The AIDS project just described was exceptional in its scale and cost; most PAR projects are, as research costs go, insufficiently supported. But broad distribution of relatively small grants goes against the grain of many funding bodies. Certainly, the trend in Australian research policy in recent years has been in exactly the opposite direction: larger grants on a more selective basis, supposedly supporting excellence.

We should, therefore, look with a skeptical eye at the assumptions about the knowledge-production process that are built into research administration at present. In my view, they often reflect mistaken though, given the hierarchical organization of academic life, understandable views about how knowledge is developed as a whole. The "great man" theory of history, long obsolete elsewhere, has an odd currency in the research world.

A decentralized approach to research funding would be better adapted to the advancement of knowledge and encouragement of innovation across a broad front. In my view, this is closer to how knowledge, including scientific knowledge, actually develops and is certainly better adapted to supporting teacher-initiated research agendas. It assumes that useful ideas and discoveries are likely to arise from many points once there is encouragement to pursue research and reflection.

But for this to turn into systematic and public knowledge, subject to testing, critique, and development, another condition is required: an adequate *dissemination system*. As I have already suggested, this is a crucial weakness in current research structures. Academic research usually does not reach the people who should ultimately use it; school-level needs do not easily translate into academic research agendas; QAD findings do not get into public arenas; and teachers' knowledge often stays in one classroom or at best in one staffroom.

Dissemination is too important to remain as unplanned, as unsupported, and as untheorized as it now is. Indeed the term "dissemination" itself is inadequate, implying a one-way flow of information and authoritative instruction. What we need, rather, is a multiplicity of *forums* for the circulation of ideas and information. We should take serious note of the skills and resources needed for running such forums. I would argue, specifically, that there is an important role for journalists in the circulation of educational research, people who are trained and experienced in the communication of events and ideas to non-technical audiences. I suggest, therefore, that research budgets should routinely provide for the employment of journalists as part of the research work force.

Journalists are often employed by universities and government agencies at present, and often write about research in the course of that work, but principally in a *public relations* function for the institution—trying to convey how impressive its research activities are. This is, to say the least, an inadequate use of journalists' skills. There should be an *organic* role for journalists in the creation of a widespread research community in education systems, in the generation of dialogue and reflection, as well as in the description and celebration of achievements.

What I am suggesting is that we need to problematize what is usually taken for granted in research reporting: who is the audience, how they will use the communication, what is the relation between the two parties to the communication. In participatory action research, it is important that the process of communication should stretch beyond the initial critical reference group to others in similar or related situations. There is a task here for central funding agencies, as the community groups involved in PAR rarely have the resources or the public profile to achieve this by themselves. One can see here a clear role for research journalism, funded centrally but provided as a service to local groups, and feeding information out through a variety of print, electronic and other media.

The Excluded

Having spent most of this paper on a note of optimism, I must finish on a darker one. The world of educational research is all too well protected, and our professional talk within it all too bland. I realize I have told the story of an AIDS research program with hardly any reference to what the people in it were going through: deadly illness, bereavement, mortal fear, political turmoil and social threat.

Education systems function both as a means of enlightenment and cultural advance, and as a means of social exclusion and oppression. That is the paradox with which educational sociology continually grapples. It is documented in all the statistics of class selectiveness, of ethnic segregation, of gender inequalities; but it is rare that the human realities beneath these statistics are thematized in publicly funded education research.

For these realities, one turns rather to texts on the margins of education research, with no diplomatic standing, so to speak. I mean texts like Sennett and Cobb's *The Hidden Injuries of Class* (1972), documenting the emotional disruption of working-class families around the promise of advancement through education; or Kozol's scarring books about schooling, racism and poverty (1967, 1991); or Embling's *Fragmented Lives* (1986) about youth who hardly get to school at all. Such works get to the level of reality they do by ignoring our canons of proper research method. (That some of these studies come from the wealthiest country on Earth, in the shadow of the largest and richest university system, makes them all the more poignant.)

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What kind of research would be useful to a black teenager facing crack and structural unemployment in a Boston apartment, or under the smog in Los Angeles? Probably nothing that looks very much like the education research that universities and governments are currently doing. What kind of research would be useful to an illiterate villager in India? Or for that matter an illiterate city dweller in Australia?

The kind of research that might be useful to them, or to educators working directly with them, is not necessarily the kind of research that education authorities want to have: precisely because it would illuminate the failures, the injustices, and the reactionary trends in education systems. Authorities have ways of preventing or hampering such research, or limiting its impact if it happens to slip through. I know this happens, because it has happened to me and my colleagues and to other researchers I know. Bureaucratic obstacles unexpectedly arise, uncomfortable reports are shelved, a great silence descends. And what can happen to well-established academic researchers will certainly happen to less fortunately placed folk.

The fact that critical research is nevertheless sometimes done is a tribute to education authorities and their mixed motives. Genuine concern for truth and justice does coexist with conservatism, careerism and defensiveness. If we are to expand the chances of research supporting the educational interests of disadvantaged children, we must take thought about how to provide political protection for education authorities against the political or bureaucratic fall-out from following their concern for truth and justice.

Here, I think, the politics of research must be addressed in a broader political context. The issue must be taken up by groups who normally leave research as a technical issue to the experts—groups like teacher unions, parent organizations, ethnic and community coalitions. There is only so much that can be done to improve education research from inside the institutional whale. In the long run, the quality of educational thought and investigation reflects the quality of democracy in the society as a whole.

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Chapter 9

UNITING PRODUCERS AND CONSUMERS: CHALLENGES IN CREATING AND UTILIZING EDUCATIONAL RESEARCH AND DEVELOPMENT

by

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If a research and development system is to address the perspectives of producers and consumers of research, a good starting point is their shared interests. Arguing that producers and consumers share a desire to improve schooling, in this chapter I urge that discussions of producer and researcher needs focus on opportunities to cement that interest. Attention to enduring concerns, such as the need for improved resources for research and development, is important. However, three other approaches—building a client-based research agenda, taking guidance from a constructivist view of knowledge use, and developing forms for research that bring producers and users closer together—also offer potential for improving schooling through research.

Discussions of the perspectives of producers and consumers of educational research and development frequently focus on their differences. We are told that researchers and practitioners operate on different timelines, use different languages, and respond to different incentive systems. Researchers bring a problematic perspective to the study of educational policies and practices; practitioners and policymakers want to know what works rather than what doesn't. While users want clear answers, researchers focus on complexity. Researchers tend to ask incremental questions that build on existing theory and knowledge, but policymakers and practitioners pose larger questions about potential actions and seek answers from a variety of sources, including but not limited to research (Birman and Kaufman, 1991; Weiss and Buculavas, 1980; Dunnette and Brown, 1968; Glaser and Taylor, 1973; Duncan, 1974; Caplan, 1977; Dunlop, 1977; Dunn, 1980; and Rothman, 1980; as cited in Beyer and Trice, 1982).

Preoccupation with differences in perspective, even when it is acknowledged that generalizations mask significant variation in both the producer and consumer communities, restricts discussions of the challenges facing educational research and development to a fairly standard list of frequently rehashed problems. For example, a major concern in this country is the lack of support for basic research (NRC, 1992). Any discussion of the need for more studies

directed at building fundamental knowledge and theory surfaces the tension between those researcher priorities and practitioner needs for more applied studies. Similarly, the low level of U.S. governmental funding for all educational research and development, both basic and applied, relative to other functions or to private sector research can be related to the perspective gap. The differences in perspectives between researchers and practitioners can be used as an explanation for low funding; if users and consumers were more closely attuned, research would have more impact on practice and more political credibility. Increased funding can be viewed as part of a solution to the perspective gap because it would broaden participation in research and development, supporting linkers, intermediaries and brokers who would bridge the distance between academics and practitioners. This is not to argue that increased funding for basic research and for research and development in general is not central to improved research and development in this country. However, there are also other approaches to improving the creation and utilization of research and development that may receive somewhat less attention because of the tendency to focus on the different world views of researchers and consumers.

In this chapter, I will focus on challenges in the improvement of research and development that arise from the commonality, rather than the differences, in producer and consumer perspectives. I start with the assumption that research producers and consumers share a desire to improve schooling and are willing to devote time and energy to that effort. Many may quarrel with my assumption, returning to "different world" motifs like researcher preference for publishing in inaccessible academic journals or client ties to the status quo. I will simply posit that among the varied incentives for engaging in and using research is a desire to improve schooling and that for many researchers and consumers, including the vast majority I have met in connection with OERI research and dissemination activities, it is the key motivation. I will address three approaches to enhancing that mutual interest: building a client-based research agenda; viewing research utilization as an educational improvement enterprise; and developing organizational forms for research that enhance ties with consumers. In the course of discussing these challenges, I will draw most frequently on examples related to my particular field—education policy research—and to the primary audience for the kind of research I do—legislators, governors, board members and other education policymakers. However, I hope that my thoughts have relevance to other aspects of education research and to practitioner audiences as well.

Building a Client-Based Research Agenda

The notion of focusing research on "issues that are relevant, timely and important" (Weiss and Vickers, 1992, p. 1098) is so straight forward and so well supported by studies of utilization that it is often taken for granted. The assumption is frequently made that because research is generally focused on key issues of education (for example, early childhood or adult education, social or economic disadvantage, or schools organization and finance) that it usually tracks directly to consumer concerns. However, within each general topic may arise many specific questions, some more compelling to users than others. Moreover, consumer concerns change

over time, even over the course of a single research project, and diverse consumers have varied uses for research and varied needs depending on their specific contexts. Thus, understanding client needs is a complicated business if it is taken seriously.

As complicated as understanding client concerns is, the process of building a client-based research agenda is even more challenging. Building an agenda that is relevant is only part of the story. Certainly, research on relevant topics is more likely to be used, but one wants research to be used, not for the sake of having it used but for the sake of improving schooling. Therefore, research has to be not only relevant but promising of payoff in that it pushes on the boundaries of current knowledge or frames it in ways that enhance understanding, policy and practice. The core of client-based agenda setting is a negotiation process that marries client concerns with researchers' views of the "ripeness" of research topics. Taking client needs seriously involves significant investment of time on the part of both researchers and users in the negotiation process, which is why strong mutual interest in educational improvement is the foundation for such endeavors.

Clients and researchers first negotiate specific topics within general areas. For example, a specific topic within the general field of school finance might be "interdistrict equity" or financial disparities among school districts. Both clients and researchers are likely to respond to temporal factors that make certain topics more critical than others, such as current litigation on interdistrict equity now in the courts of 23 states. Policymakers look to researchers for guidance on how to respond to this new round of court decisions and pending decisions; researchers know that these decisions are redefining the field of school finance in a way that inevitably must shape their agenda.

Topic consensus is only the starting point; then the discussion turns to the aspects of the topic that need addressing. Consumers may look to researchers to understand the dimensions and extent of interdistrict inequity, to clarify the conceptual bases for various approaches to the problem, and/or to provide empirical evidence on the effects of various formulas and funding approaches. Their interests may vary depending on how, and on the extent to which they know how, they will use the knowledge; that is, following Huberman's (1987) scheme, whether to enhance conceptual understanding, to apply to decisions in an instrumental fashion, or to strategically legitimate decisions already made.

In the interdistrict equity example, the standing court decisions and the arguments in a number of pending cases push in the direction of school finance remedies that go beyond equalization of dollars among school districts to equalization of services. For example, cases in New Jersey, Texas, and Kentucky used extensive data about ranges of spending in school programs and practices as evidence for determining that school finance systems permitted unconstitutional inequities. Hence, policymakers are becoming interested in ways of measuring program equity and in how dollar inputs translate into different levels and types of service provision. Researchers want to investigate those areas that have payoff in terms of advancing

knowledge, areas where previous research has suggested additional levels or modes of investigation, surfaced or emphasized new problems, highlighted the need for replication or for designs that enhance generalizability, and the like. So, in the case of interdistrict equity, many researchers want to go beyond the studies of taxing and spending inequities and formula effects that have been conducted extensively in the past, to studies of how dollars translate into programs in various settings and what kinds of program measures can be used meet alternative definitions of equity.

In the school finance example, consensus around the topic of interdistrict equity and around the priority for conceptualizing program equity meets the needs of clients seeking school finance reform, as well as researchers desiring to refine and enhance their field. Undoubtedly, the external pressure provided by the courts is a key factor in forging consensus. When external factors are less obvious or missing, reaching agreement about specific topics may be more difficult, both among consumers in different settings and roles as well as between researchers and consumers. However, a full history of the interdistrict equity example would also take into account how previous research on the limits of simple dollar equity influences plaintiffs and judges in framing cases, and how policymaker concerns about programs extend beyond the courts to more generalized worries about the relationship between school improvement and school finance in times of increasing spending and decreasing resources. So, the picture is considerably more complicated than the mere story of court intervention. A more complete rendering probably brings the example closer to many other areas of educational research. Previous research and client needs over time interweave, and often there is an intersection of client needs and areas "ripe" for investigation which negotiation between clients and researchers can surface. The challenge is to establish a process that enables the negotiation.

There are undoubtedly many research activities shaped by interaction with clients. I am familiar with two examples of client-based agenda setting that suggest how such processes might be constructed. In the Consortium for Policy Research in Education (CPRE), which I direct, a multitiered governance structure provides for an iterative process of client-researcher topic determination. An executive board, or national advisory panel, comprised of elected and appointed policymakers and other participants in the policy process provides perspectives on important research issues and advice on framing our research so that it is most useful to policymakers. Twenty-six national associations that are formally affiliated with CPRE represent the range of constituents—key policymakers, practitioners, and interested participants who compose the education policy community. The associations range from the American Federation of Teachers, the National Education Association, and the State Higher Education Executive Officers to the National Governors' Association and the National Alliance for Business; and they provide important advice about the information needs of their members. Research and dissemination advisory committees, composed of outside experts from state and local research agencies as well as universities, advise on research designs and emphases that respond to the suggestions of the executive board and affiliated organizations. A management committee of

CPRE researchers uses the accumulated advice to make final determination of research topics and approaches.

The interaction among the various advisory bodies and CPRE staff takes three primary forms. First, at formal meetings of the Board, advisory committees or affiliated organizations, we present overviews and emerging findings of research in progress with the purpose of encouraging debate about further questions raised by current research. Second, we frequently ask advisors to spend a few minutes reflecting on emerging policy issues and problems (after warning them of the question in advance). Third, whenever we present research findings to advisors or to policymakers, we note issues raised in discussion or question-and-answer sessions that may suggest interesting research angles.

As a result of the consultation, CPRE's policy research agenda has evolved much as policy itself has changed. In 1985, 2 years into an extensive state education reform movement that stressed state-level policy solutions to problems of school improvement, our agenda focused heavily on new state standards for students and teachers and ways of measuring progress that resulted from such standards. The work continued through 1990 as longitudinal studies of the effect of standards. We also developed new projects focusing on school-based change and de-emphasizing state mandates, as a new wave of reform began to take shape. In 1987, we began several studies of the changing roles and responsibilities of teachers, administrators and policymakers around school-designed improvement. By 1990, when a few leading states moved to set ambitious outcome goals for students and to coordinate state policies, CPRE's agenda had similarly come to focus on combining the two waves of reform into a more coherent, systemic reform approach.

The second example of client-based research agenda development is OERI's approach to a congressionally requested evaluation of education reform. The work is described as "a deliberate collaborative effort between the federal government and potential users of the results of (the) research" (OERI, 1992). Collaboration is intended to lead to research that is targeted on important, practical issues, and framed and conducted in a way most suited to those interested in using it to influence practice. At the initial stage of the effort, OERI convened representatives of practitioners, policymakers, business leaders, parents and others interested in education reform to consult on the specific topics that would comprise the research. Twelve topic areas, such as assessment of student performance, parent and community involvement in education, and school uses of time, were identified. OERI published requests for proposals for the 12 studies; researchers responded with specific designs that they felt most advanced knowledge within the topic areas. Then OERI again called on users to review proposals and make recommendations about contractors. Similar advisors will review draft reports and other products to assure that they are crafted in meaningful ways. Associations representing practitioners, policymakers and other clients have been asked to assist in disseminating the knowledge derived from the studies.

Since both examples concern policy research, the conclusion might be drawn that client-based agenda setting is relevant only to applied research. However, in both cases, some of the research shaped in response to client advice is more basic than applied. CPRE conducts research on decisionmaking processes in governmental institutions; one of the questions that all 12 OERI studies are to address concerns the sources of information that are used by reformers. These areas could easily be classified as basic political science research on political processes. Perhaps, as MacRae (1987) suggests, an appropriate term for research responsive to user needs is "problem-oriented" research. Applied and basic research approaches can both be marshaled to address specific problems. Consultation with consumers about which problems are of interest, and what they need to know about the problems, might enhance all phases of research and development agenda setting for all types of research, from program planning by funding agencies to the shaping of specific research projects.

Utilization as Educational Improvement

A second aspect of strengthening the bonds between research producers and consumers around improved schooling entails more attention to how knowledge is used. The research on utilization is quite clear: the meaning of research is constructed by the user (Lindblom and Cohen, 1979; Huberman, 1987, 1990; Weiss, 1977, 1980; Weiss and Vickers, 1992; Miles, 1992; the Network, 1992; and Tushnet, 1992). In understanding its relevance, individuals translate research findings through the lens of prior knowledge and understanding, making sense of new knowledge in the context of their daily activities. If the knowledge has an effect, it is to alter views of those activities or the conduct of those activities. Knowledge use is, therefore, learning and change. If knowledge is to be used, both producers and consumers need to work on the conditions that promote learning and change in schools, and in other societal institutions that affect schools. As the recent National Research Council report on education research put it, research use is education reform (NRC, 1992).

The education research community should be at the forefront of using research about the use of research to inform research and development, since it is research on learning that is the foundation of understanding knowledge utilization. We should be the *last* to offer simple access or supply-side solutions to promoting utilization. We should be the *first* to view use as a complex change process in which "getting the research out there" is only the first step. Perhaps this increasingly sophisticated understanding of knowledge use is taking hold. For example, when members of the research community testify on research impact in Congress, we speak not only of changed practice but of changed ideas, and we stress the long period of time it takes for knowledge to permeate and take hold. However, we could do much more to take the constructivist view of knowledge use seriously. At least two approaches to improving research and development along these lines occur to me. First, we should focus more on the context of knowledge users, and second, we should strengthen the integration between research and dissemination.

A Focus on the Context for Knowledge Use

If research is meaningful only in the context in which it is used, the research and development community needs improved understanding of various contexts and of the interaction between research use and setting. One way to achieve better understanding is to support the replication of studies of instructional strategies or practices in varied contexts. Replication is urged by many scholars of research utilization because findings take on more force when their generalizability is enhanced, when they have been confirmed by several researchers, and when they have been refined through a number of iterations (see, for example, Fox, 1990). One of the effects of low support for research in this country is that repeat studies frequently lose out to more glamorous "new" studies in the competition among research topics seeking support. The failure to fund repeat studies means that we lose the opportunity they provide to strengthen findings and, as a result, to improve the likelihood and certainty of impact. Like a vicious cycle, lack of strong impact undermines research funding and lessens the opportunity for conducting repeat studies. Replication is also important, however, because it provides more guidance about the conditions supporting utilization. By studying the effects of interventions in multiple settings, we can learn more about the interaction between the setting and the intervention. We will better understand the aspects of context that affect the results of the intervention and therefore be able to offer better advice about changes that might be necessary to support the intervention. If practitioners receive guidance about how best to support research-based improvements in specific contexts, the chances for meaningful and sustained change might be enhanced.

Another approach to greater focus on the context of use concerns more attention to system issues as research topics. It seems clear that if using research to improve education is to change, system factors affecting the will and capacity to change are important issues. At each level of governance and practice much current research in the United States examines the incentives and supports or barriers and constraints for change. For example, policy researchers attend to political, economic and institutional factors that shape policy decisions; researchers in the field of administration and leadership look at the policy, bureaucratic, and organizational context for administrative decisionmaking; scholars of the setting for teaching and learning look at the school as a workplace and the classroom as a social-instructional system.

These studies rarely present a complete picture of system supports for improvement for several reasons. First, researchers tend to specialize on a certain level or element of the system; collaboration among such specialists is relatively rare. While many researchers collaborate with colleagues to compare contexts for using knowledge to improve practice across types of classrooms, schools, communities and policy settings (including other nations), collaboration among researchers who specialize in different contexts is much less frequent. Although there are some instances of such cooperative studies (see, for example Cohen and Ball, 1991), it is unusual for researchers focused on classroom learning to work together with organizational specialists or policy researchers to understand the range of context influences on student learning. Much of the discussion of research and development focuses on the different paradigms of research

producers and users; perhaps it would be more productive to spend some effort considering how the particular paradigms of researchers constrains our ability to get a more complete understanding of the context surrounding knowledge use.

A second reason that many current studies fall short of providing adequate knowledge of the system surrounding research use is that most research is crafted around a few aspects of context. In general (and again there are exceptions), we study one, or perhaps a few related policies, for example, administrative decisionmaking or leadership under certain well-defined conditions or classroom settings for particular types of activities. We do this for two reasons: we need some way of managing complexity and crafting that is reasonable and feasible; rarely is funding sufficient for large-scale, multilevel, multisite research of broader scope. Researchers strive for focus to make their tasks manageable, and funding agencies press for focus so they can spread scarce resources among many projects.

In the United States, concerns about confidentiality and legal restrictions on federal data-gathering limit what we can learn about the context of schooling from our large national assessment efforts and data collection efforts. For example, the National Assessment of Educational Progress (NAEP) assesses the achievement of students in key subjects, gathers data about learning and classroom settings from teachers, and permits links to be made between student and teacher data and school-level data collected from the principal. Since 1990, data about students, teachers and schools can be reported by state, and therefore the state policy context can be taken into account in analysis. However, no data is collected by school district, nor are schools selected to be representative of the district. Consequently, information about an important source of influence on practice and achievement is missing. In the National Center for Education Statistics (NCES), the Schools and Staffing Survey (SASS) collects school and district data about organization and personnel but does not include large enough samples in most states to permit state-by-state representation. Therefore, NAEP tells us about students in the classroom, school, and the state context but nothing about the district, while SASS provides information about schools and districts but not about states. Thus, neither survey gives a complete view of the system.

More support for research might allow more large-scale, multidimensional research that makes possible a fuller understanding of context. During the interim, one way to compensate for the limited understanding provided by numerous focused studies might be to orchestrate or aggregate them, so that they focus on the same sites or same data bases over the same period of time, and thus allow the aggregation of otherwise discrete and unrelated pieces of information. Another tactic would be to promote synthesizing activities so that numerous, independent conclusions and findings could be merged.

A third problem that inhibits our understanding of the complete system influencing change is our tendency to focus on the "new approach," an issue alluded to earlier under the discussion of the need for replication (see Fullan, chapter 7, for discussion of the emphasis on innovation).

In this nation, we often approach research much like we approach education policy, as a series of disconnected projects, each one promised as "the answer" (Smith and O'Day, 1991; Cohen, 1990). We shape research as if the next "innovation" or "new approach" is likely to provide the clue to educational improvement that has eluded us up till now. We act as if we did not know that many past research-based approaches fell short of expectations because of issues surrounding their application and use—not because they were not promising in and of themselves. We keep searching for the next great hope, while we should be focusing on what we would do if we found it. More attention to the context of change—for example, to the factors that give teachers the time and incentive to use research findings—would be as valuable as the most promising improvement strategy. Focusing on how to make the system work in support of innovation seems at least as important as discovering innovations, although the former is less glamorous and perhaps less attractive to funders.

To recap, a number of factors related to the funding and conduct of research limit our ability to understand the system surrounding and influencing research use. Nevertheless, the research we currently have on school change and policy implementation, as limited as much of it may be in shedding light on systemic issues, could be better mined for information about research use as well as for information about change processes and effects.

Most education policies are also theories about improving education. For example, policymakers set class size limits because they believe smaller classes facilitate instruction. They also require that certain courses be offered, set minimum levels of qualifications for teachers, provide support for school-based planning, and fund staff development programs based on similar beliefs about what works. Often these beliefs reflect research evidence, even though the policymakers may not be aware of it or even though they may be over or misinterpreting actual findings (Huberman, 1987, p. 606). In fact, many of the state-level reforms of the 1980s requiring more academic content reflect earlier research findings on opportunity to learn and the role of expectations that found their way to policymakers' agendas through the extremely popular report of the National Commission on Excellence in Education, *A Nation at Risk* (Fox, 1990). Studying the implementation of policies—the translation into practice of these pieces of "knowledge"—is one approach to the study of research use. Because aspects of policies other than their substance, such as the context in which they are to be implemented, often command our attention, we may pay less attention than we should to how the knowledge is used in implementation. The conclusion is simply that we have many sources of information about knowledge use in various contexts that we may be overlooking.

Strengthen Integration Between Research and Dissemination

If context and knowledge use are so intertwined, it follows that researchers interested in the use of their findings should understand the contexts in which it will be used. Not only should the research community focus more on context in their research, but researchers should also

attend to the specific context of interested consumers. They can best do that by playing a strong role in the dissemination of findings rather than turning the dissemination role over to others.

Huberman (1989) calls the necessary interdependency between research and dissemination "sustained interactivity." He defines it as "multiple exchanges between researchers and potential "users" of that research at different phases of the study" (p. 9). These phases include:

- Before the study is conducted, where scope is negotiated and the target public's preexisting knowledge is assessed;
- During the study, where members of the target public are involved in reviewing findings and determining how findings might best be presented; and
- During analysis and write-up, when a dissemination plan is developed and the implications of the findings for challenging local norms are examined.

However, the most intense period of interaction, observed in many cases of utilization, occurs when "the study findings are brought directly to the user organization" (p. 10). During this extended period, findings are translated into more operational forms, and researchers and consumers work together on determining alterable variables and discussing various aspects of the context of significance to the user. Links formed through sustained researcher/user contact are important predictors of use (Huberman, 1987).

Yin and Moore's (1984) studies of nine research and development projects on natural hazards led them to conclude that social interaction, that is, "the existence of active social networks of research investigators and researcher users," was the best explanation of utilization (p. 3). The communication between researchers and users was "two-way and highly interactive" and occurred throughout the life of the project (p. 6). Their conclusion on this point is so strong that they made a point of underlining it: "... a major finding was that *research utilization begins when research and development begins, and is not a sequential step that only follows the research and development*" (p. 6). The importance of interaction is certainly relevant to research-use by policymakers. Policymakers value personal discussions with researchers, face to face. They are inclined to listen to those they know and trust (Nelson and Kirst, 1981; Van Horn and Hetrick, 1987), suggesting that sustained interaction is of benefit. If no source of information is available in their own settings, they turn next to their associations, also considered to be trusted sources (Fuhrman and McDonnell, 1985). Researchers from "out of state" take on credibility when they are known to the associations or to in-state researchers and/or when they personally spend time in the policymaker's setting working through findings.

Findings about the benefits of interaction suggest that the research profits when it is well-grounded in context and that utilization is more likely when the users develop personal relationships with researchers. Therefore, researchers should be involved in dissemination, which itself should be seen as an activity that spans the research process. Interestingly, both the current Senate and House bills to reauthorize OERI, as well as the National Research Council report on

OERI, propose to keep dissemination essentially separate from research, placing it in a separate office or directorate. All three plans would support some form of intermediary or linking activities to promote utilization, and each would include some applied research activities in the dissemination or outreach office. Also, all of the sponsors would probably applaud active dissemination activities by researchers emanating from divisions devoted primarily to research. However, the organizational charts send a powerful message, one which could work over time to divorce rather than integrate research and dissemination, to the detriment of utilization.

A constructivist view of knowledge use suggests more focus on the context of use and more interaction between research and dissemination. Both ends could be enhanced by greater proximity between researchers and users. The third approach to building on common researcher/user interests in improved schooling is to develop new organizational forms for research that feature such proximity.

New Organizational Forms for Research

Two emerging forms for educational research increase contact between researchers and users. One is collaborative research; inquiry conducted by researcher-practitioner teams. The second is consortia involving research centers or large projects that spread research activities over geographically separated sites involving many varied practitioner settings.

Collaborative research projects

Sometimes called action research, these projects involve practitioners and researchers working together as a team. The work is sustained, beginning with project conception and continuing through design, data collection, data analysis, and application of findings. Such activities are challenging to design and maintain since they involve busy people who have varied incentives for engagement. However, those who have participated in collaborative projects give them excellent reviews. Among the benefits are better focus on problems important to practice, enhanced validity of instruments and analyses, improved presentation of findings, and greater authority for findings. Teacher participants feel less isolated and are likely to become more reflective about their practice, and researchers gain improved understanding of the complexity of the instructional process. All partners profit from improved insights about other participant's activities and roles (Ward and Tikunoff, 1982; Oakes *et al.*, 1986; Porter, 1987; Atkin *et al.*, 1989).

In contrast to what appears to be expanding interest in collaboration among researchers and teachers, there seem to be few, if any, examples of researcher-policymaker team efforts. Policymakers also frequently advise research projects of all types. Staff in our consortium have undertaken joint research with staff of policymaker associations. However, teaming with policymakers for sustained, joint inquiry that extends to all phases of research is rare. The reasons are interesting to ponder. Time does not appear to be the major barrier. Many teachers

find it possible to engage in collaborative inquiry although they are as busy as policymakers, and their time is less flexible. More likely, the policymaker-researcher division of labor is more firmly established and socially embedded than is the case with teachers and researchers. Researchers are often university faculty, and so, like school faculty, they teach; they engage in the same line of work, so to speak. Also, the creation of collaborative projects with teachers is often a deliberate mechanism to change the social conditions of teacher's work, to diminish their isolation, enhance their engagement, and the like. No one has undertaken to change the conditions of work for policymakers, although given the ills of the American political system, attention to that issue might be beneficial. In any case, collaborative inquiry involving researchers and policymakers seems like an intriguing idea, one I'd like to try.

Consortia

The organization of research activities as multisite, geographically spread activities is another way to enhance contact with a variety of clients and to improve understanding with varied contexts. Not all types of activities or research missions lend themselves to geographic dispersion. But for some it works quite well.

The Consortium for Policy Research in Education's (CPRE) operation is greatly enhanced by our consortium structure. The location of the six institutions in different geographical regions facilitates dissemination and collaboration with regional, state, and local actors. It also lowers the cost of conducting research that is national in scope. Furthermore, as CPRE researchers had extensive prior experience in education policy analysis, they brought to CPRE well-developed contacts in their state and regional policy communities. Our national consortium structure enables us to build on, expand, and unite localized networks. In fact, one can argue that a national education policy center should be a consortium rather than a single institution because regional dispersion enhances understanding of and access to various policy contexts.

Since understanding and interacting with diverse contexts might benefit many types of inquiry, the consortial structure has relevance beyond policy research. Furthermore, modern communication technologies overcome many of the drawbacks of geographic distance. Some may worry about integration of research conducted across a variety of sites. In my experience, coherence is likely to rest as much, if not more, on conceptual integration and the shared vision of like-minded colleagues than on physical proximity. Since colleagues at various institutions collaborate because they choose to, and not simply because they find themselves at the same place, they are likely to hold compatible beliefs about research and educational improvement that provide a foundation for cohesion.

Note

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Chapter 10

IN SEARCH OF NEW STRUCTURES AND PROCEDURES FOR ORGANIZING GOVERNMENT FUNDED EDUCATION RESEARCH AND DEVELOPMENT [1]

by

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Twenty years ago, I participated in the launching of the National Institute of Education (NIE). As we began, we had high hopes that we could bring the benefits of disciplined inquiry and development to the field of education. Very good people flocked to join the venture. Its horizons seemed very broad. Within a year, way before NIE had had the opportunity to complete any work, its funding was cut nearly in half. Federal education research and development expenditures have continued to decline ever since.

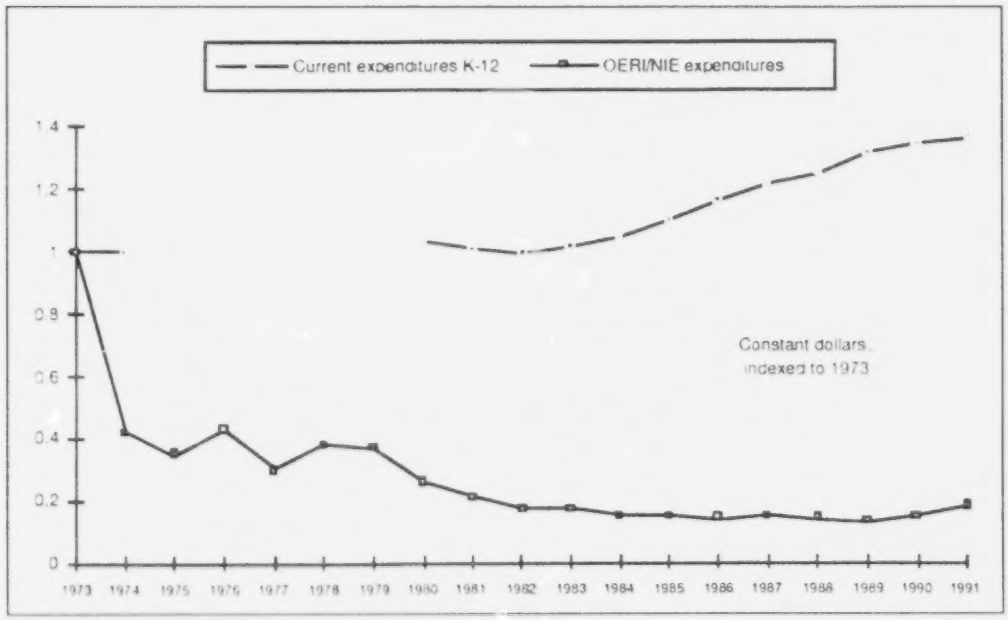
This chapter examines some of the reasons for the low demand for education research and development. It also suggests that proposed changes in the way the United States educates its youth can have important implications for the future demand for education research and development. The chapter closes with several suggestions for the structure and conduct of the federal research and development effort.

Background

The funding for United States education research and development is small relative to the size of its education enterprise. Moreover, in the United States this level has decreased significantly since the early 1970s. Figure 1 portrays this graphically. The reasons for this have been widely debated (Levien 1971; Cronbach and Suppes, 1969; National Academy of Education, 1991; Atkinson and Jackson, 1992). Most of the arguments come down to a belief that much of the research that is conducted is either of low quality, or of low relevance to educational practitioners and policymakers, or is simply inaccessible to the education community. At various times the problem has been ascribed to the culture of the institutions that perform research and development, the instability of the support for institutional and individual research, the lack of incentives for the research community to publicize and communicate its work outside professional channels, or the lack of high quality research-community talent because of the low individual and

professional rewards associated with conducting education research and development. At a more fundamental level, some have noted that the fundamental complexity of education—coupled with the circumscribed capacity of traditional disciplinary methods to deal with that complexity—limits the apparent productivity of traditional scholarly inquiry.

Figure 1—Indices of expenditure: OERI research and development and current national elementary and secondary school expenditures



Whatever the reasons, low and declining levels of support have certainly exacerbated the quality problem. The politics of research funding have resulted in spreading resources thinly among many claimants. For most of the history of federally funded education research in the United States, funds have been heavily concentrated in a set of laboratories and university-based centers that have had a marginal and uncomfortable existence, an existence in which it has been hard to plan and attract first rate people. The national politics of education research and development have also proven to be trying for leaders of the principal federal funding agencies (NIE and its replacement, the Office of Educational Research and Improvement [OERI]) resulting in regular turnover in top level personnel than can hardly have been beneficial to research quality.

The normal prescription for dealing with these problems is more money and better organization. The studies by the National Academy of Education (1991) and the National Research Council (1992) contain but the latest in a long and honorable line of such prescriptions.

I generally agree with the studies' arguments that the quality of education research and development can be significantly improved only if there are substantial increases in funding (or a substantial decrease in the spectrum of research conducted). I am more agnostic concerning the benefits of reorganizations, having been party to several in the past. However, increased research quality and quantity will have little impact on the quality of education policy and practice if there is little demand by the education community for the products of that research.

In my view, the demand is weak for three key reasons: a) the low levels of incentives for improvement of educational practice, b) the absence of resources to improve school performance, and c) a practitioner culture that does not value research-based knowledge. The causes for this are complex and difficult to address. However, failure to do so is likely to continue to relegate education research and development to the role of a minor actor in the education world.

For reasons that have been amply documented in the past few years (Finn, 1991; Hill, 1990, 1991), United States' schools have modest incentives to improve their performance. While there has been a national clamor for such improvement by business, civic groups, education stakeholders, and government leaders, most individual schools experience little pressure to improve. Parents and communities generally express satisfaction with their own schools even if they have doubts about schools more generally (Elam, 1991). Despite the national furor, most employers seem satisfied with the preparation of their workforce (National Center on Education and the Economy, 1991; Glennan, 1989).

School systems at the state and local level may have felt more pressure. The publication of national commission reports, such as *A Nation at Risk* (1983), led many states to adopt test-based accountability systems, more elaborate teacher certification systems, and, in a few cases, programs that provided incentives and sanctions to individual schools for performance.[2] But these actions were not research based; in most instances they were not even evaluated. Moreover, these policies undoubtedly increased the bureaucratization of the schools which is widely viewed as inhibiting the inclination of schools to engage in innovative practices.

The second reason for the low levels of demand for education research and development is that fiscal and human resources in education systems seem perpetually in short supply in local school districts. Improvements in education (as in most any enterprise) normally require investments of such resources. If a teacher is to change her instructional program, she must invest time in acquiring new instructional resources and new pedagogic skills. Time is a scarce commodity for a teacher, and the funds to support released time are usually limited. The instructional materials budgets are small (Robinson, 1991). Staff development funds are also limited and often used for activities with little relationship to school performance.

Indeed, in my experience, schools do not generally have an investment mentality, probably because it is so difficult to free up investment funds. In commercial enterprises, continuing

increases in productivity provides a source of funds that can be invested in obtaining still further increases in such productivity or in new products that better satisfy the enterprise's market. In education and most social services, opportunities for such productivity increases have been taken to be quite limited. Indeed, for several decades a crude measure of productivity, the teacher/pupil ratio, has steadily *decreased.* While teacher salaries (in real terms) decreased in the 1970s, they increased during both the 1960s and 1980s. The combination of the decrease in crude productivity matched with wage increases meant that many school districts found themselves continually seeking budget increases at times when public resources were limited. As a consequence, in most cases, expenditures that are related to future school performance (investments) are neglected in favor of simply meeting current operational needs.

This lack of school system investment should be expected to have a profound effect on the demand for education research and development. Arguing from analogy to other enterprises, research and development should be embodied in the activities and materials in which investments are made. Staff development might deal with new pedagogical techniques or the use of newly developed curricular materials. Those materials might themselves be the product of development efforts. The process of changing educational programs and practices might be accompanied by evaluation and assessments to determine whether improvements have been achieved. The less there is of this type of activity taking place, the less opportunity to draw upon research and development related to new practice. And the comparatively modest demands for educational materials and services mean that limited numbers of intermediate institutions and firms exist to translate the fruits of research and development into products to be marketed to the schools.[3]

To be sure there are publishers of textbooks, instructional materials, and of assessments. Computer-makers IBM and Apple see education as a market of growing potential and are supported by a significant number of software developers. Many consultants provide services that frequently are "knowledge based." But these seem small potatoes in comparison with the activities (and budgets) of manufacturers of pharmaceuticals and medical equipment that serve the health care industry.

The final reason that there is little demand for the products of education research and development is that few education practitioners and policymakers are educated and socialized to their professions in an environment that understands and values such activities. Most teachers and administrators are trained in institutions that conduct comparatively little research and development. In contrast, doctors are normally trained in medical schools where research is an important (and valued) activity. Doctors intern in teaching hospitals that are also frequently the sites of initial trials of new drugs, equipment, and procedures. They are required to attend seminars and courses dealing with best current practices to maintain their accreditation. Thus most doctors have significant knowledge of and respect for biomedical research and development.[4]

In a profession whose members possess substantial autonomy in their activities, as is the case with most classroom teachers, the fact that they are not exposed to much research during their training poses a problem for the research and development community. In the absence of such exposure, there is little reason to expect that many would turn to research when they face professional problems. They have not been provided with the knowledge necessary to permit them to be critical consumers of education research and development

These three problems—lack of incentives, lack of resources to support investment, and lack of familiarity with and respect for research among practitioners—pose formidable barriers to the successful use of education research and development. In the absence of such use, there will be little support for added spending. In the absence of added spending, there will be little reason to expect the quality of education research and development to improve. Unfortunately, in my view, there is little that research and development policymakers can do by themselves that will break this vicious cycle.

There are, however, important elements of reform under way in the United States that may change this situation. Widespread areas of consensus have emerged concerning desirable features of a future pre-collegiate education system. Some of the features should have important impacts on the demand for research and development. Implementing the reforms that are being proposed will cost money—the type of investment funding we have just discussed. This will provide opportunities for the use of research-based knowledge. The reforms will also require significant restructuring of the training of teachers and administrators, thus providing opportunities to introduce research more fully into their training culture. In the next section, the nature of the changes that are being debated and, in some places, implemented are briefly introduced.

Emerging Dimensions of Reform

In light of the United States' history of highly publicized reform efforts accompanied by, at best, modest changes in educational practice, one should not be terribly optimistic concerning the nation's capacity to reform its education system. Still, the current efforts pushing reform seem broadly based and to have a chance of significantly impacting the nation's schools.

1. All children in America will start school ready to learn.
2. The high school graduation rate will increase to at least 90 percent.
3. American students will leave grades four, eight and twelve having demonstrated competency in challenging subject matter including English, mathematics, science, history, and geography; and every school in America will ensure that all students learn to use their minds well, so that they may be prepared for responsible citizenship, further learning, and productive employment in our modern economy.
4. U.S. students will be first in the world in science and mathematics achievement.
5. Every adult in America will be literate and will possess the knowledge and skills

necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.

6. Every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning.

This is a development many never expected to see. Historically, the United States public and its leaders have viewed goal setting as the responsibility and prerogative of state and local authorities. Setting national goals was thought to erode this local authority. But the public's attitudes have changed.

This change no doubt reflects a variety of factors. There is widespread concern that the United States is losing its competitive position among the advanced nations of the world and that at least part of the reason is a poorly educated workforce. Some employers have argued that they have difficulty in finding new employees possessing even modest academic skills. The performance on national tests such as the National Assessment of Educational Progress has been more or less static for several decades. Widely publicized comparisons of American student's test scores with those of students in other nations have not been flattering. And, despite several decades of national funding for education for the disadvantaged, dropouts continue at unacceptably high levels and the performance of traditionally disadvantaged groups continues to lag.

In the aftermath of the establishment of the goals in September 1989, a National Education Goals Panel was created to report on progress in meeting these goals. Their initial report continued the relatively bleak description of educational performance that had earlier characterized the debate (National Education Goals Panel, 1991). The Congress also authorized the creation of a National Council on Education and Standards whose members included a wide spectrum of representatives from government, education, and the public. In its report, this council concluded:

> ...high national standards tied to assessments are desirable. In the absence of well-defined and demanding standards, education in the United States has gravitated toward *de facto* national minimum expectations (National Council on Education Standards and Testing, 1992).

The council went on to recommend the development of a system of assessments that would include multiple measures, be voluntary, and be developmental rather than static.

The creation of standards to be met by nearly everyone is a theme that characterized a number of reports issued by a variety of sources over the past several years. For example, the Business Roundtable has developed nine principles to guide their affiliates in creating strategies to help improve the education system of the nation. They begin by stating five operating assumptions:

- All students can learn at significantly higher levels.
- We know how to teach all students successfully.
- Curriculum content must reflect high expectations for all students, but instruction time and strategies may vary to assure success.
- Every child must have an advocate.
- The new system is performance or outcome driven.

While the belief that virtually all children can learn, albeit at different speeds and different ways, and that schools are more likely to see that they do learn if there are measurable standards is key to most proposals; there are other common themes as well. Decentralized or site-based decisionmaking on school practices is part of nearly everyone's' prescription for better schooling. State and federal regulations that force attention to accountability for inputs rather than outputs are broadly criticized. Many proposals call for reductions in supervisory personnel and more differentiation of staff functions at the school building level. Involvement of parents and other volunteers is seen as important. A curriculum that emphasizes "authentic" tasks or projects as a means of motivating students to acquire significant skills is another common theme, coupled with the idea that assessment should involve tests of students capability to perform realistic tasks. And there is a widespread feeling that communications and computing technology have reached the point where they can become an integral part of the educational process rather than simply an add on.

America 2000

Seeking to build on this seemingly broad level of national consensus, President Bush and his Secretary of Education, Lamar Alexander, put forward *America 2000*, a strategy for improving America's schools in April 1991 (United States Department of Education, 1991). This strategy contained many elements but came to be characterized by a few. First, it called for increased school accountability. It pushed for national standards and for the development of tests reflecting those standards. It also placed emphasis on the opportunity of parents and their children to choose the school that they will attend.

To create new schools that embodied many of the principles just mentioned, the strategy proposed creating 535 "New American Schools," one for each congressional district and two additional for each state (presumably recognizing its two Senators). These were to be funded by one-time million dollar grants to be awarded to communities that had adopted the national goals and developed strategies to enable their schools to meet those goals.

The emphasis on communities reflects the Bush administration's sense that school systems, left to their own ends, would not be likely to make the changes needed to meet the national goals. The public education bureaucracy was viewed as too wedded to the status quo and needed to be forced to move by more broadly representative community action and by the need to compete to retain students. Indeed, the entire *America 2000* strategy hardly mentions

school administrators. Its funds were to be channeled through the governors rather than the state education departments. The only educators to receive regular attention in the strategy were teachers and principals.

Another element of the *America 2000* strategy was the creation of a nonprofit corporation, the New American Schools Development Corporation (NASDC), which was to be funded privately and to sponsor the development of designs for new and radically different schools. The authors of the strategy felt that such an effort would bring fresh ideas to the table which, if adequately funded, could provide the inspiration and technical know-how to schools across the country who would be striving to achieve the new standards.

While the initial response to the *America 2000* strategy was generally quite positive, its progress has not been particularly satisfying to leaders in the Department of Education. The secretary has worked diligently to get states and communities to declare themselves *America 2000* states or communities and to commit themselves to developing local strategies to achieve the national goals. Many have signed up but it remains to be seen how much real activity will take place. The New American Schools Development Corporation was created early in July 1991 and has attracted great interest and a significant number of proposals to develop break-the-mold schools. But the legislation that supports wider trials of choice plans and provides resources for investment in the 535 New American Schools has stalled. A powerful coalition of education and public school interests oppose choice plans that involve private schools. A Democratically controlled Congress has been reluctant to provide funds to individual schools in what appeared to be a highly political manner—particularly in an election year. Finally, the education establishment was generally unhappy with funding that bypassed traditional state education authorities. Consequently, the legislation to implement the *America 2000* strategy that is making its way through the Congress puts the reform money that might have gone directly to the New American Schools back in the hands of state education agencies.

A number of these agencies themselves, however, are going through restructuring that is broadly consistent with the ideas that underlie the proposals of national commissions, the business community, and *America 2000* itself. Perhaps most frequently cited is the state of Kentucky, forced to restructure itself after its education system was declared unconstitutional. Its plans include creating standards, new and more varied assessments, and fostering site-managed schools. In principle, the state agency is moving from a regulating and directive stance to a facilitating and assisting one. Other states are following alternative routes but ones that often involve elements of the same principles. Ohio is considering restructuring itself to emphasize assistance to school districts over regulation and direction. Pennsylvania has eliminated Carnegie units as the currency of state regulation and substituted performance standards. Virginia has reorganized to emphasize assistance to local communities rather than regulation. California has, for a number of years, been evolving state standards, performance-oriented tests, and curricular frameworks that are intended to provide assistance to local schools without unduly constraining them.

Principles for education practice and policy

In sum, there is a broad spectrum of reform efforts bubbling at the national, state, and local levels. While they vary in content and specifics, reflecting the cultures and traditions from which they spring, they possess a surprising number of common themes. Most:

1. Seek to establish high standards against which the performance of students will be measured.
2. View almost all children as capable of meeting these standards but in different ways, different time periods, and with the allocation of varying levels of resources, for example, teachers time, instructional materials, students time.
3. See schools as requiring substantial autonomy in the choice and development of their program—as long as they meet the standards. A corollary of this is that schools are likely to differ more from one another than is now the case.
4. View teachers and instructional leaders/principals as professionals who must be allowed to exercise appropriate levels of discretion in carrying out their functions.
5. Integrate schooling more fully with the community, drawing on social service agencies, employers, and cultural institutions for services, support, and instructional settings.
6. Place significant emphasis on developing capabilities to work together, values essential to good citizenship, and the necessary underlying skills necessary to succeed in tomorrow's more competitive and complex workplace.
7. Reflect a belief that a wide array of changes are required; not just modifications in curriculum and instruction, or in governance, or in the preparation of teachers. This requirement is normally stated as the need for systemic change.

In my view, these principles, if they in fact become the basis for education practice and policy, have profound implications for the structures and procedures for organizing education research and development.[5] I want to highlight two of these implications.

First, if sets of standards are developed and agreed to nationally, if we create robust, effective, and credible means of assessing students' performance against those standards, and if schools and their staffs (rather than school systems) are held accountable by their communities for achieving those standards, the incentive for improving education should be substantially increased. It is important to continually emphasize that these are big and uncertain ifs, but there is a reasonable chance that the first of the three barriers to the demand for the products of education research and development that were suggested at the beginning of this chapter will be lowered.

Second, the implication is that in the new education system envisioned by these national groups, teachers and instructional leaders have a greater role in determining what is done within a school. Today a common curriculum is often specified, textbooks are frequently centrally

adopted, and state regulations shape the use of the school day. Whether most teachers can and will take on this important role remains to be seen. Early experience is decidedly mixed. Site management often seems to lead to little change in practitioner behaviors. However, some part of the absence of change undoubtedly reflects the failure to change other aspects of the system and/or the lack of models and resources for proceeding (Hill, 1991).

Professionalization

The growing importance of the teaching professional in the design of their school programs means that teachers become a more important market for that part of the research and development system that is concerned with the improvement of practice. Given our earlier observations concerning the training of teachers and their unfamiliarity and lack of sympathy with research, this growing importance of this audience should be a major concern for research funders but changing teachers' attitudes and capabilities to use research is a daunting task.

For a variety of reasons, the types of research and development that are conducted at universities often does not seem very relevant to most practitioners and particularly teachers (Connell, 1992). Indeed, it is not clear that much of it should be. Arguing by analogy, an ordinary practicing doctor is unlikely to read most research literature produced by university-based biomedical scientists. Instead, the relevant aspects of that research are utilized in the activities of a wide variety of "mediating" institutions that use the relevant parts of the research to produce products and services of more direct relevance to the practitioner. These institutions are the pharmaceutical companies, medical equipment manufacturers, teaching hospitals, or education and training institutions who produce products and shape the practices of doctors and a wide array of other practitioners. On occasion, these products bypass the practitioner altogether and are used directly by the consumer who has little sense of the research and development that supports them.

Mediating institutions, particularly those that directly serve teachers, are not very well developed in education. This reflects the limited demand resulting from limited investment-type funding and circumscribed incentives to seek instructional improvements. It probably also reflects the government's experiences gained in developing curriculum, instructional products, and programs in the 1960s and early 1970s, which were less than resounding successes (McLaughlin, 1991). If the reform environment of the 1990s is to lead to substantial change, I suspect that one requirement will be the development and enhancement of institutions that provide school-building personnel with the type of assistance and support that they need to perform at significantly higher levels.

This class of institutions can take many forms. The group of regional laboratories funded by OERI play such a role, although they have tended to see administrators and central office or state level staff as the principal audiences (Atkinson, 1992). Teacher centers, professional development centers, regional resource centers, and the National Diffusion Network also

constitute such institutions. But new institutions, accessible to teachers and front-line instructional supervisors, are required.

Along with several colleagues at RAND, I have been assisting the New American Schools Development Corporation to develop a program intended specifically to create a group design organization with the mission of providing help to school personnel seeking to create new and significantly more effective schools. This effort, still very much in its infancy, draws on past experiences with developing education programs. It may provide lessons for the creation of other institutions that span the research and development and practice communities.

The New American Schools Development Corporation (NASDC): An Example of an Effort to Create New Mediating Institutions

As noted above, NASDC was created in July 1991, at the request of President Bush, to select and support a number of teams that would create, test, and foster the use of designs for entire schools. The designers were asked to put aside existing assumptions about how a school should look and operate. They were to assume that they would not be constrained by common school regulations (though civil rights requirements must be met). Current assumptions concerning administrative procedures, staffing structures, etc., were to be set aside. The designers were constrained to create designs that could be operated at budget levels that were roughly comparable to those in the communities where those designs were to be tested in order to assure that they would be fiscally feasible to implement.

Moving with considerable speed, within a month and a half, NASDC held the first in a series of three design conferences and a national teleconference to seek comments on a draft of a Request For Proposals (RFP). These conferences attracted well over 3,000 people. The RFP was issued in October 1991 and nearly 700 proposals were submitted four months later. NASDC announced the award of contracts in mid-July.

As it has evolved, the NASDC effort has come to have three major objectives. First (and most important for our argument), it is intended to provide what amounts to venture capital to a group of promising designer teams to develop both designs for schools *and* organizations capable of assisting communities to implement those designs. Second, the collective evaluation of the performance of the designs is intended to test whether the objectives and assumptions embodied in the RFP are attainable and, particularly, whether the results can be attained as the design teams move from the initial to subsequent sites.[6] Finally, the designs collectively are intended to identify the current regulations and practices that need to be changed in order to permit the designs to be implemented.

NASDC's current time horizon is about 5 years. It is being funded by privately raised capital. Under the concept set forth in the RFP, the designers will take about a year to turn their design concepts into concrete plans and then 2 years to begin the implementation and initial

testing of that design in at least two settings. Those which are doing well will attempt to export their designs to still more sites in the fourth and fifth years. It is NASDC's hope that most of the successful designer teams will continue in existence beyond the 5 years to refine their designs, develop further designs, and provide design assistance to additional communities. Funding for such activities would come from the communities themselves or from other sources such as foundations and government. Figure 2 is a pictorial representation this vision.

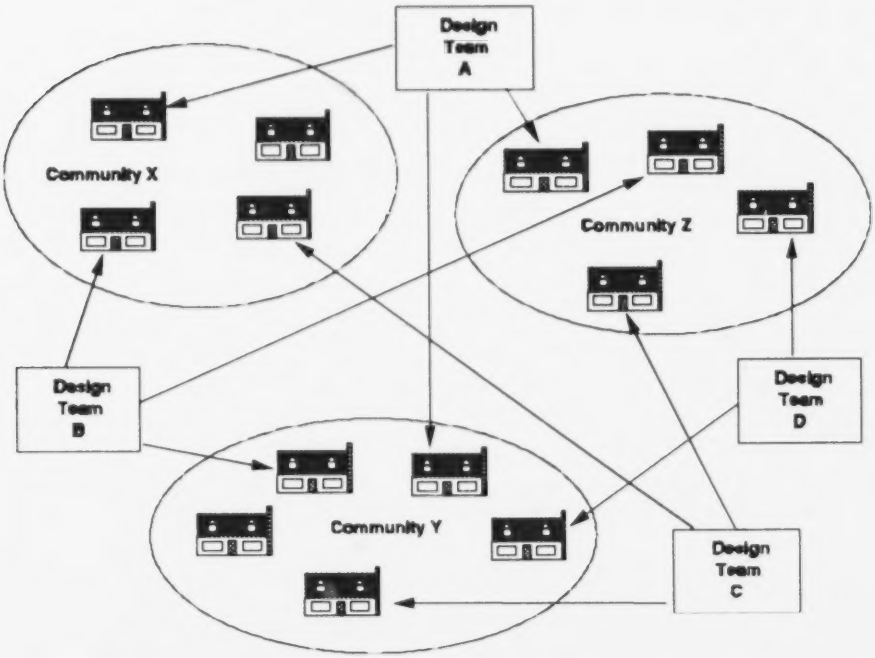
The figure suggests that individual schools would contract or otherwise form associations with a design team. A given community might have schools that use several different design teams and which draw their own particular character from those designs. The implication of this is that design teams need to develop designs and supporting materials that are flexible and adaptable enough to permit individual schools to tailor them to their own needs and develop the ownership that is necessary for the design to survive. If they fail to do this, the entire enterprise is likely to be fated to be like many of the model programs activities of the 1960s and 1970s in which the programs seldom spread to many sites or even survive the removal of the initial funding.

For the purposes of our discussion here, the major point is that these design organizations constitute a potential linkage between researchers (and developers) on the one hand and school level personnel on the other. The NASDC RFP clearly called attention to both the potential importance of the research base for what the designers proposed and the importance of assuring that the designs could and would be used by other communities. It stated:

> "NASDC is interested in understanding the bidders basis for believing their designs will achieve high levels of performance. Thus, in assessing the potential of the design, NASDC will be concerned with the research and/or experience that supports the design. ...bidders should support their design vision with research, analysis, and lessons drawn from prior or existing reform efforts or solidly reasoned "think pieces." NASDC supports bold ideas and understands that some proposals will not be built on a research base. However, if this is the case, a reasoned justification should be provided" (NASDC, 1991 p. 33).

The majority of the proposals contained reasonably well-documented, research-based justifications for their design concepts. NASDC was also interested in how practitioners would be aided in using the design, and significant weight was given to the quality of the plans for developing the necessary skills in the school staff.

Figure 2—Design teams serving many communities

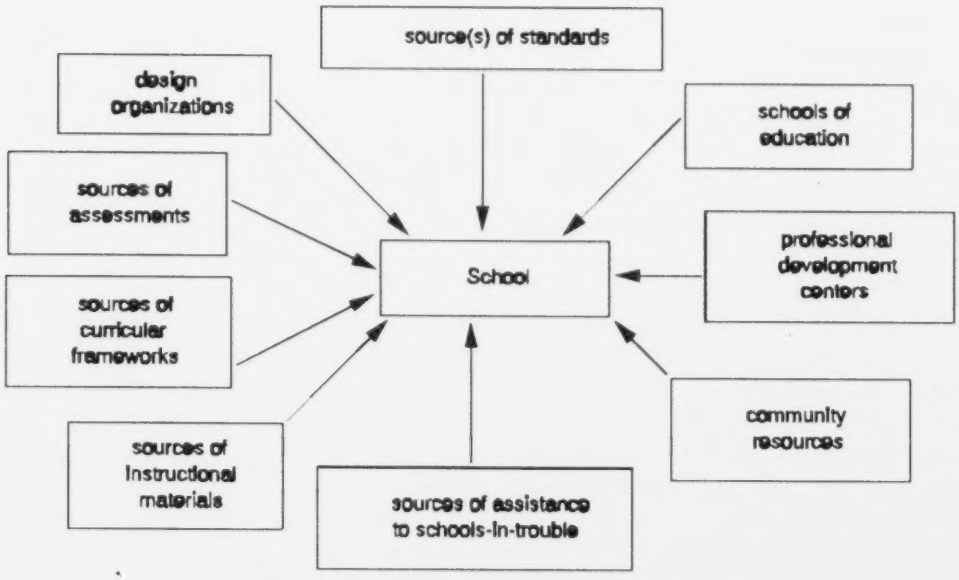


Organizations providing continuing assistance to schools to implement their designs are not unknown. Indeed, in preparation for writing the NASDC RFP, the RAND Institute for Education and Training assembled a group of individuals who had experience with such organizations. Representatives of groups such as Theodore Sizer's Coalition of Essential Schools, Henry Levin's Accelerated Schools, Cities in Schools, and James Comer's group at Yale University provided advice concerning desirable features of the NASDC mission and program, many of which found their way into the RFP.

Mediating institutions do and should include organizations performing functions besides school design. As noted above, there are many examples of such institutions already in existence. Teacher centers and professional development centers have provided the settings for teachers and principals to join and develop understanding of common problems or collaborate in the development of new programs. The National Diffusion Network has facilitators to assist schools adopting NDN designs and provides modest resources to developers of approved programs to assist others to implement them. John Goodlad's Center for Educational Renewal represents another mediating institution (Goodlad, 1991).

Figure 3 is a schematic suggesting the resources the school might draw upon. It suggests that schools and their teaching staffs should be able to turn to a wide variety of sources for advice and assistance. It is these sources or mediating institutions, rather than the school staffs themselves, that should be seen as the consumers of much of the practice-oriented research and development supported by the federal government. The creation and strengthening of such institutions is, I believe, a worthy activity for the federal government.

Figure 3—Resources in support of school improvement



The recent report of the National Research Council, *Research and Education Reform: Roles for the Office of Educational Research and Improvement*, proposes the creation of a Reform Assistance Directorate whose responsibilities are to "provide reform assistance to parents, schools, districts, states, professional education associations, teacher development institutions, commercial publishers, and employers" (Atkinson and Jackson, 1992). It would administer the regional labs (to be renamed "Reform Assistance Laboratories"), the National Diffusion Network, ERIC and its successors, etc. While, I suspect that these are worthy activities, I have in mind a much richer and denser array of institutions that are readily accessible to teachers and administrators wherever they are located. Importantly, I think most of these mediating institutions should serve specific education improvement purposes and should not be seen as

"arms" of the research and development community. They should serve the needs of teachers and instructional leaders in schools, and they should be started and survive because they do so. One of my initial premises is that such institutions will find education research and development an important contributor to their efforts but the institutions should not be governed to assure that they use research and development or adopt canons of behavior and value systems that the research and development community deems appropriate.

This probably means that the federal activities fostering the development of such institutions should not be restricted to—or perhaps even centered in—a research and development funding agency. In the United States the leadership of such agencies has normally been drawn from the research community. Not surprisingly, the values and norms of the research community have shaped the agencies' operations. Today, OERI is organized into bureaus with distinct missions, for example, the Office of Research and Programs for the Improvement of Practice. Perhaps the education improvement components of OERI are sufficiently free of the dominance of a research culture, but at the current time they continue to report to an OERI director who comes from the research community.

Conclusions

Commissions, research directors, policy boards, cabinet secretaries, and a multitude of dedicated government staff have toiled for 30 years to create structures and procedures for funding and administering federally supported education research and development that commands the respect of the public, educators, the Congress, and the research community itself. As the reports of the National Research Council and the National Academy of Education testify, that enterprise has not been without fruit. Schooling practice and policy are different today as a result of the work of educational researchers, many funded by the federal government. Parts of OERI are seen both as important and improving and have been rewarded with increased budgets. But, on the whole, their efforts have been rewarded with declining budgets and relative anonymity.

This chapter has argued that these failures are less a product of lack of vision or poor performance of the leaders of the federal research and development effort (or the education research community itself) than they are of the nature of the education system that the reform effort is trying to affect. In particular, I have argued (along with most critiques of American elementary and secondary education) that teachers, schools, and systems of schools have limited incentives to improve their performance. Moreover, they possess (or choose to allocate) limited resources to invest in the human capital, materials, and time needed to create, test, and implement new programs and schools that would provide much higher performance. Finally, the training of educational professionals neither equips them to make use of research nor predisposes them to think research has something to offer.

Thomas K. Glennan, Jr.

After a fair number of years trying to promote and manage educational research and development, I have concluded that education research and development cannot be "marketed" on its own merits. When the National Institute of Education was created in 1972, it was sold as the source of the ideas and practice that would improve education for all citizens. The Nixon administration, which created the NIE, proposed cutting or stabilizing other education programs and thrust NIE forward as a demonstration of its commitment to improve education. It made no difference that NIE's leaders tried to explain the importance of practitioners in improving education. The budget figures conveyed a different message. Research was portrayed as the answer to improving educational performance, In doing this, the Nixon administration and NIE created the seeds of its own downfall.

It now seems to me that educational research and development will prosper only to the extent that the entire education system becomes more productive. Rather than leading the way, it will do best by being a collaborator in school improvement and reform. We understand far better now than we did in 1972 that the crucial efforts to improve education are those of frontline practitioners. By frontline practitioners I mean mostly teachers and their instructional leaders, but clearly, the activities of superintendents and other administrators are critical as well. Only if those groups succeed in improving school performance (and come to command public support), and if they see the national research and development effort as enhancing their efforts, will support for educational research and development be forthcoming. Frontline practitioners constitute the major constituency to be served.

America is in the midst of what may become an extraordinary time of change and improvement in its elementary and secondary education system. It has adopted broad national goals and set out to describe how it is doing in meeting these goals. It has embarked upon attempts to create national standards and to develop tests that will allow students, parents, teachers, schools, and communities to know how well they are doing in achieving these standards. Advocates of these efforts argue that they will create much more positive incentives governing the performance of educational institutions.

Even if the incentives are substantially and productively changed however, the other two problems remain. The absence of fiscal and human resources to invest in the development and implementation of improved educational practices means that what improvements are made will rely largely on the (often uncompensated) efforts of a comparative handful of dedicated educational professionals. These efforts will continue to yield a small number of schools of very high quality. However, the schools and school systems that do not have access to such professionals, or which serve populations requiring such extensive teaching efforts that no time or energy is left for school improvement, will remain roughly the same. If we are to renew our education system, resources for such investments must be found.

Finally, there is the problem of the lack of ability, inclination and encouragement of educational professionals, particularly teachers to see research as an important means for

achieving the goals of their profession. Teachers are not normally encouraged to use research methods in solving their own problems nor provided the skills to be intelligent users of research. Changing this situation will occur only in the context of long-term restructuring and improvement of the recruitment and training of the nation's educational professionals, an important subject not addressed here. Such a revitalization will take years to work its way into the education system.

However, most teachers and other practitioners probably should not be expected to directly produce or consume research. Instead, they will collaborate with other professionals who do. These might include colleagues such as master teachers in their school, staff at a professional development center, a faculty member at a local university, or a member of the technical assistance staff of a school design team. I believe that it is important for the federal government to foster the enhancement of existing institutions and the development of new institutions that are likely to provide connections between the research community on the one hand and the practice community on the other.

These institutions must see their functions as serving the needs of practice. They must be institutions to which teachers and instructional leaders, in particular, turn to for assistance. They may be free standing or components of other institutions such as universities or school systems. They may be governmental, nonprofit, or profitmaking. However, their continued existence should depend in large part on the demonstrated willingness of schools and school practitioners to use (and pay some portion of the costs of) their services.

The arguments that I have made here suggest the following recommendations to the United States Department of Education's Office of Educational Research and Improvement. While these are specific to the situation in the United States with its decentralized education system, the spirit of the recommendations may also be appropriate for other nations as well.

Recommendations for OERI

1. A principal mission of the Office of Educational Research and Improvement should be helping school-level personnel to succeed in imparting the skills, knowledge, and values that their community seeks in its students.

2. Practitioner skills and knowledge are a key to such success. Reform of the preparation and renewal of school-based personnel is considerably beyond the scope of this paper but a part of that preparation should include development of school-based research skills. OERI should seek to understand the appropriate nature and scope of such skills and work to see that teacher preparation incorporates their development.

3. Assessment shapes instruction. Assessment is a key means of school level accountability to its community. School level personnel are unlikely to succeed in providing the skills, knowledge, and values to their students in the absence of an appropriate system of assessment. There is widespread agreement that current assessment practices are inadequate to the vision of education that is emerging. Therefore, a sustained and vigorous program to develop assessments, assessment technologies, and assessment systems that can serve the needs of various communities is required. Such a program should include strong collaborative activities with state, school system, and private assessment development efforts.

4. While individual schools should have first line accountability for achieving the community's goals, it is neither efficient nor feasible that they design, implement, and assess their programs wholly on their own. Leaders of the nation's education system should assure that high quality sources of assistance are available to schools. A wide variety of potential sources already exist, including curriculum and instruction units in school districts, schools of education, teachers centers, school-based research and development offices, professional development centers, regional laboratories, design consortia, and numerous consulting groups. New ones such as education extension agents are being proposed.

5. OERI, with the assistance of the practitioner community, should assess the strengths and weaknesses of various assistance sources in helping school level personnel to develop successful schools. On the basis of that assessment, it should work to foster the creation of an improved array of such institutions. The principal mission of these institutions should be to foster improvement in schools. They should not be seen primarily as dissemination mechanisms but rather as problem solvers working in collaboration with the practice community. They would use the results of research or research processes only as they feel they serve the mission of improving practice. These institutions should come to be seen as a principal audience for the research and development that is supported by OERI and other research and development funding agencies.

6. School level personnel cannot be expected to significantly restructure their operations and continually renew themselves without adequate resources to invest in that process. OERI should engage in a significant program of research to understand the resource requirements for school-level restructuring and improvement and the manner in which existing schools and school systems provide (or fail to provide) such resources. This program should result in recommendations to federal, state, and local education and community leaders concerning the best means to assure that such resources can be made available.

7. While the emphasis placed on assistance to practitioners may convey the sense of a funding institution that is wholly responsive to a single constituency, that is neither what is intended nor is it good policy. In the first 5 years of NIE's life it undertook several significant planning efforts, for example, in teaching, in reading, and in school organization. These have been recognized as having had substantial impact upon the research, policy, and practice communities (Kaestle, 1991). These planning efforts took several years, involved considerable collaboration among researchers and practitioners, and included substantial synthesis of research. New efforts of this sort, involving significant collaboration among researchers and between researchers and practitioners should be mounted in areas deemed important to sustaining the nation's efforts to improve its education systems. As with the earlier NIE efforts, this planning would be intended to provide guidance not only to the federal government's program but the research that is supported by other funding sources as well.

Notes

1. This paper has been prepared for an International Seminar on Educational Research and Development, Co-sponsored by the Center for Educational Research and Innovation, OECD and the Office of Educational Research and Improvement, U.S. Department of Education, June 1-2, 1992. The views expressed are those of the author and do not necessarily represent those of RAND or its sponsors.

2. In some cases, these systems have certainly placed pressure on individual schools to change their behaviors by better preparing their students for the tests but it is unclear that this has significantly improved the broad performance of these schools. (Koretz *et al.*, 1991).

3. To be sure there are publishers of textbooks, instructional materials, and of assessments. IBM and Apple see education as a market of growing potential and are supported by a significant number of software developers. Many consultants provide services that frequently are "knowledge based." But these seem small potatoes in comparison with the activities (and budgets) of the manufacturers of pharmaceuticals and medical equipment that serve the health care industry.

4. Interestingly, federal support for R&D on health services (as opposed to biomedical research) has not been well funded and its usefulness has often been questioned by the medical services communities.

5. One should not neglect a critical, substantive implication of these themes for the nation's education R&D agenda. Standards and assessment is the cornerstone of these reform ideas. While the development of standards is a substantially political exercise, the development of assessment techniques is fundamentally an R&D task. If we do indeed proceed in the directions suggested here, significant increases in funding for the development of assessments is crucial. Moreover, it is clear that past use of assessments in formal accountability systems have sometimes had deleterious effects on the educational practice (Koretz, 1991). Additional education R&D should be directed to assessing both the intended and unintended consequences of the adoption of standards and of the types of assessments that are advocated to accompany them.

6. This requires a significant evaluation effort which RAND is in the process of designing.

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PART III

CONCLUSION

Chapter 11

AFTERWORDS: RESEARCH AND REFORM IN THE UNITED STATES

by

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During the year following the Washington seminar a new American President was elected and a Democratic administration abruptly replaced the Republican one. With the change in administrations came a change in the nature of the working relationship between the Secretary of Education and the Democratically controlled education committees of the United States Congress. The adversarial stance that had so long characterized the relationship between Congress and OERI was relaxed; relationships became more amicable; rapprochement was in the air.

The arrival of a new administration and a new Secretary of Education, and the coincidental expiration of the 5-year congressional authorization for the Department of Education's programs fortuitously provided the opportunity to redesign and redirect federal education programs and policy in accord with the outlook and aspirations of the new administration. The reauthorization included the Office of Educational Research and Improvement (OERI), thus affording the added opportunity to restructure the federal role in education research and development in a manner consistent with the proposed changes in the Department's program policy. Accordingly, a legislative proposal reflecting the education plans and goals of the new administration and entitled "Goals 2000: Educate America" was prepared and sent by the Secretary to the Congress.[1]

Renewal and Reform

There is much in the new legislation that is familiar. Indeed, the new legislative proposal is wrapped in rhetoric that is redolent of the previous administration's. For example, even the names of the (Republican) legislation proposed in 1993 and the 1994 (Democratic) proposal are similar: "America 2000" before and "Goals 2000" now. Moreover, the National Education Goals mentioned in Chapters 2 and 10 of this volume were introduced in 1992 at an "education summit" involving the Governors of the states and President Bush, and composed the centerpiece of the Bush administration's education plan. Yet, they remain the objectives of the Clinton administration, and, as they did in America 2000, anchor the introduction to the Goals 2000 legislative proposal. While these similarities represent a rare instance of continuity between different political administrations, their origin is not mysterious; President Clinton was Governor

Clinton and a leading exponent of the National Goals framework at the education summit in 1992. Nor is the continuity undesirable, since it builds upon the reform momentum already under way and employs concepts that are in wide currency.

While unusual and certainly newsworthy, the continuity of policy is not the important story. What is important is the break from the education past that both proposals represent. Traditionally, American citizens have jealously guarded their prerogative to determine the curriculum and standards for their local schools, and one of the most remarkable aspects of this this past few years is the newly emerged national consensus in favor of national standards and a national curriculum. Thus, the development and validation of a national curriculum, new methods of assessment, and world class standards of academic and instructional performance are the tasks before us. These issues represent a break from the past, and political variations on their themes notwithstanding, these are the issues that will determine the future consequences of American education.

Proposed Reforms

While not yet enacted into law, and with some parts still under hot debate, the Goals 2000 legislation provides a reliable look at the framework that will steer American federal educational policy over the next several years. The legislation also offers an opportunity to draw comparisons between the implied research and development described in the Goals 2000 legislation and the structure and mandate of the Office of Educational Research and Improvement described in its reauthorization legislation. One expects, of course, that there would be a close correlation between the research and development requirements of federal education policy and the component parts of the federal office charged with meeting those requirements.

Goals 2000: Key Provisions

There are four key titles (sections) in the proposed legislation. Title I identifies as National Education Goals the six educational goals developed at the education summit of 1992, and, as such, Title I represents the principal source of continuity between the current and past administrations.

Title I

The National Goals establish that by the year 2000:

1. All children in America will start school ready to learn. Specifically, disadvantaged and disabled children will have access to pre-school programs, every parent will have the support they need in helping their pre-school children to learn, and all children will receive the (pre- and post-natal) nutrition and health care they require to enter school healthy in mind and body.

2. The high school graduation rate will rise to at least 90 percent and the difference in graduation rates between minority and nonminority students will be eliminated, and, of those who still dropout, 75 percent will nevertheless complete their high school degree or equivalent.

3. American students will demonstrate competency in English, mathematics, science, foreign languages, arts, history, and geography, and will be prepared to exercise responsible citizenship and self-sustained lifelong learning. Moreover, the performance of students at all levels of schooling will significantly improve and the distribution of minorities' achievement will approach that of nonminorities. Also expected to improve are facility in foreign languages, cultural knowledge, and community participation.

4. The United States will lead the world in achievement in mathematics and science. In order to meet this goal math and science education will be strengthened everywhere, especially at the elementary level, the number of qualified math and science teachers will rise by half, and the number of American undergraduate and graduate students will rise significantly, particularly among women and minorities.

5. Every adult will be literate and in command of the knowledge and skills required to compete in a world economy and exercise the rights and responsibilities of citizenship. American business will become an integral part of the educational process, and all workers will have the chance to acquire the education and training required by the technological workplace and lifelong learning.

6. Every school will be free of drugs and violence and will offer a disciplined environment that is conducive to learning. Accordingly, every school will have fair and firm policy about drugs and alcohol, a comprehensive drug and alcohol education and prevention program, and a community-wide effort to maintain safety and security.

Title II

The continuity of policy established by the National Goals is extended by Title II which proposes a National Education Goals Panel to establish a bipartisan authority to build a national consensus for education improvement. The Panel is charged to report on the nation's progress in achieving the national goals. The charge includes reviewing and approving voluntary national standards of content, student performance and opportunity-to-learn, and reviewing and approving the criteria for the certification of these standards and a voluntary national assessment system. The Goals Panel will report annually on these matters through a plain language "national report card" that will identify progress in meeting the aims of the National Goals, and the steps necessary to cover the remaining distance.

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The establishment and certification of voluntary national content and performance standards will be in the hands of the National Education Standards and Improvement Council. It is also the task of this council to develop and certify voluntary national opportunity-to-learn standards. These standards will describe the conditions of teaching and learning required for all students to have a fair opportunity to achieve the learning described in the national standards of content and performance. In turn, each of the states will have the opportunity to develop and submit for accreditation voluntary state standards of content, performance and opportunity-to-learn. The state standards will be compared against the national standards of content, performance, and opportunity-to-learn, and the National Education Standards and Improvement Council will certify them if they are consistent with the national standards. Similarly, a national voluntary assessment system will be developed and used as the criterion for assessment systems developed by the states.

In particular, the Standards and Improvement Council would be charged to identify areas where content and performance standards are needed, certify these standards according to a definition of what American students should know and be able to do, and then send these standards to the National Goals Panel for the Panel's approval. The Council will be charged to ensure that the voluntary national content standards they develop:

- Are comparable to and competitive with the best in the world;
- Reflect the best evidence about student learning and effective instruction; and
- Were discussed in an open, public forum so that all concerned parties may have a voice in their development.

Similarly, the Council shall certify voluntary national opportunity-to-learn standards, with particular concern that the

- Standards may be used by any state without imposing severe restraints on state and local discretion about instructional methods;
- Opportunity-to-learn standards take account of the quality and availability of curricula, instructional materials, and technology;
- Teachers are able to deliver instruction of the necessary high quality;
- Teachers and principals can be provided the necessary qualifications; and
- Curricula, assessment, and teaching practices are aligned with the standards.

The Council shall also foster the development and certification of state opportunity-to-learn standards and assessments. These state assessment standards will illustrate the levels of achievement that should be expected, help improve instruction, inform parents about student progress, and assist policymakers in making decisions about educational practice. Finally, the Council will determine what other countries with content standards of this kind do in order to provide professional development, opportunity-to-learn, and prepare their teachers.

Title III

Title III of this proposal will provide grants to the states and local communities so that they can develop their own systemic reform strategies that will take them in the direction of meeting the voluntary national standards for content, performance, and assessment. States that want to develop a school improvement plan that meets the requirements of the Standards and Improvement Council can prepare a plan and submit it to the Council. If the Council concludes that the plan meets the standards it has set for content, performance, assessment, and opportunity-to-learn, then it may provide a grant for up to 5 years to support state and local governments while they develop their improvement plan.

Title III offers the chance for bottom-up reforms that complement the top-down reforms described in Titles I and II. That is, in company with the development of voluntary national standards of content, performance, assessment, and opportunity-to-learn, the states and local authorities will design their own plans to achieve the national goals and meet national standards. Presumably, these bottom-up plans will take into account local variations in needs and requirements, thus allowing the reforms to be fine tuned according to local needs and prerogatives.

Title IV

Title IV calls for the creation of a National Skill Standards Board. The Board would be charged to develop and certify voluntary national standards of workplace skills and the methods for their attainment. The influence of skill standards should be observed in every facet of the American society:

- In industry, where the standards will tell employers what skills are necessary for employment;
- In the work force, where workers can use them to obtain certification of skills;
- In schools, where students can use them to gauge the skill levels required to obtain quality employment; and
- In government, where skills standards may be used to estimate and maintain the integrity of publicly funded training programs.

Toward the end of developing skill standards, the National Skill Standards Board will identify clusters of occupations. For each of these clusters, the National Board will develop skill standards that take into account the skill standards of other countries and the standards of high performance occupations that can be regularly assessed and updated as a consequence of technological advance, that can be transferred from one workplace to another, and that do not discriminate by factors such as race, gender, and age. Similarly, the Board will develop assessment and certification standards that also avoid discriminatory decisions, that take account

of the practices of other countries, alternative evaluation methods and techniques methods to assess the fairness and equity of the assessment system.

Finally, the Board would devise a system to evaluate the implementation and certification systems that are developed, a system to promote and disseminate information on these matters, and a system to revise and update the skill standards and assessment and certification systems as changes emerge.

In order to attain these goals, the Board will:

- Support research relevant to skill standards and make the research available to the public;
- Identify and catalog skill standards used by other countries and industries and firms in the United States;
- Provide a clearinghouse for the sharing and dissemination of information about skill standards;
- Develop a common nomenclature of terms about workplace skills;
- Foster the development of training materials for attaining skill standards that involve work experience and work-study programs leading to progressive levels of higher certification; and
- Provide technical assistance and develop long-term plans for the development and use of skill standards.

Implications for Education Research and Development

The course implied by these provisions of the legislative proposal will take the nation into uncharted education waters. The introduction of formally composed federal oversight to determine and approve the legitimacy of the policy and practice of the states (the Standards and Improvement Council) is without precedent. Moreover, with the advent of national standards, voluntary or otherwise, American education departs from its historical reliance, indeed insistence, on local, that is, state and community determination of curriculum and performance standards.

Bold as these changes are, they are perhaps less remarkable than the plan to establish standards to gauge the students' opportunity-to-learn. As the states hold their students to uniform and higher standards of achievement, they must also assure that all students have a fair and equitable opportunity to meet the new expectations. Accordingly, states would be expected to develop and meet opportunity-to-learn standards in the same manner as they develop and meet the curriculum and assessment standards. The intent is to optimize the prospects for higher achievement for all students, but especially for disadvantaged students who attend poor schools. The step is also necessary before academic failure may be fairly ascribed to reasons within the students' control—for example, lack of effort—rather than those outside of it, such as incompetent teaching.

State of the Evidence

Each of the titles that compose the Goals 2000 legislation supposes a foundation in research and conceptual clarity that education researchers around the world will testify does not exist. In fact, the assumptions that underlie the commitment to higher standards for all children, the construction of new curricula in the major subjects, the development of new methods of assessment, and the identification of the educational components of opportunity-to-learn are largely untested, sometimes counterintuitive, and frequently unstated. Yet, it is clear that the task of helping policymakers sort out the effective from the ineffective, the cost-efficient from the inefficient, and cause from effect will be the most welcome information that research can offer.

Not that evidence is a necessary precondition to sound public policy, much less a guarantor of sound policy when it is available. Yet, when the states may be required to spend great sums of money to meet the opportunity-to-learn standards, it is not unreasonable to establish a valid and causal relationship between school resources and academic achievement before the reforms are implemented. However, because of the lack of evidence, this condition will often remain unmet, a fact that alone underscores the need for both the redirection and resuscitation of the federal role in education research, development and dissemination.

Redesigning OERI

While the nation's economy restrains the prospects for greater resources for education research, the redirection of the federal effort is, nevertheless, at hand. Embodied in two versions, a bill to reauthorize the Office of Educational Research and Improvement is pending in Congress along with Goals 2000. A few highlights from the bills will supply the flavor, if not the final form, of the new OERI agenda:

- Four or five national institutes would be created, each of which will pursue a different research and development theme. For example, one version (Senate) of the reauthorization offers a National Directorate on Curriculum, Instruction and Assessment, a National Directorate on Early Childhood Learning, Families, and Communities, and a National Directorate of Postsecondary and Adult Education, while the other version (House) specifies a National Institute for the Education of At-Risk Students and a National Institute for Innovation in Educational Governance and Management. Resources for the new institutions would vary somewhat. For example, in the Senate's version the early childhood directorate would receive 50 percent of the proposed total outlay ($70 million) for the effort, while the remaining four would receive 10 percent, and 10 percent would be dedicated to synthesis and coordination activities over all.

- An Office of Dissemination would be established to identify exemplary programs throughout the nation, supply technical and financial assistance toward the

development of promising programs, disseminate information, and bring teachers and schools into contact with federally supported regional educational laboratories. A proposed National Education Dissemination System would establish a panel of experts to review, evaluate, certify, and distribute information about model demonstration projects to the states. Clearinghouses for the dissemination of education research in all the major areas of interest would be created, and an electronic network connecting libraries, schools, universities and homes would be developed and installed.

- Teacher training institutes would be established on a regional basis to provide the training necessary for teachers to meet new and higher standards of instructional competence and to enable teachers to participate as "change agents" in the introduction of new methods of instruction and assessment.

- A network of 10 to 15 regional educational laboratories would be created to disseminate information about exemplary programs, promote academic achievement, determine regional needs, help improve the schools, provide training in research, and coordinate the work of the directorates with the laboratories.

- An Office of Educational Technology would be established to develop and provide guidelines for the use of technology in the classroom.

- An international education program would be created to provide an international exchange program. Funds would be spent on the study of economics and civic education activities through grants to study, evaluate, and analyze these dimensions of education systems in other countries.

- A variety of special emphases would receive attention, including grants to provide equipment and materials to improve science and math education in schools that enroll 50 percent or more disadvantaged children, develop parents-as-teachers programs and a national center to disseminate information and provide technical assistance to parents of children at-risk and to establish a multimedia approach to the motivation and improvement of the reading and writing of young children.

These components of the new OERI would be created in addition to the continued support of the National Center for Education Statistics and the National Assessment of Educational Progress, the principal sources of descriptive statistics about the characteristics and performance of the American education system. Plainly, the new OERI follows the old in its main emphasis on at-risk children, curriculum and assessment, adult education and state assistance, and, as such, also reflects the consistencies between the Clinton administration's Goals 2000 proposal and its predecessor, America 2000. There is, however, little that reflects the emphasis that Goals 2000 places on the development of national and state curricula, opportunity-to-learn standards, and

measures of achievement. The research and development strategies by which these goals will be realized are left to the Department of Education to design and implement.

The particular role of the OERI and education research also remains to be determined, but surely the assumptions that support and rationalize Goals 2000 deserve further examination and substantiation, as does the continued development of the curricula and assessments upon which the innovations are predicated. In any event, the next few years will witness the development of a new framework for the conduct of education research and development designed to advance the intent of Goals 2000, itself a radical departure from the past. While it is not possible to forecast the results of this endeavor, it is safe to predict that the opportunity to forge a new relationship between education research and development and school improvement has never been greater. It is an opportunity that deserves close study.

Note

1. At this writing Congress had not yet acted upon the legislative proposal, but preliminary indications were that the issues and the approach to them, that is, the substance, were generally acceptable. Accordingly, the legislation's implications for education research and development will be discussed as though the substance of the legislation had been authorized.

BIOGRAPHIES

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Michael G. Fullan is dean of the Faculty of Education, University of Toronto, and professor in sociology of education. Prior to this appointment, he was Assistant Director (Academic) at the Ontario Institute for Studies in Education. An innovator and leader in teacher education, he has developed a number of partnerships designed to bring about major school improvement and educational reform. He participates as researcher, consultant, trainer, and policy advisor on a wide range of educational change projects with school systems, teachers' federations, research and development institutes, and government agencies in Canada and internationally. In June 1990, as the first recipient of the Canadian Association of Teacher Educators (CATE) Award of Excellence, he was recognized for "outstanding contribution to his profession and to teacher education, and was seen as a "researcher/scholar practitioner of the highest calibre" by that organization. The Ontario Association of Curriculum Development awarded him the prestigious Colonel Watson Award for outstanding leadership in May 1993. He has published widely on the topic of planned educational change, most recently *Change Forces: Probing the Depths of Educational Reform* (1993). U.S.: Taylor & Francis Inc.; London, U.K.: Falmer Press; and Toronto, Canada: Gage Publications.

Thomas K. Glennan, Jr. (Ph.D., economics, 1968, Stanford University), is a senior economist in the Washington office of the RAND Corporation. His research at RAND has spanned a wide variety of policy planning issues in such diverse areas as education, manpower training, energy, environmental enforcement, demonstration program management in health and human services, and military research and development. He is currently leading RAND's alternative federal roles in elementary and secondary education. He is a coauthor of books on the management of research and development and the use of social experiments in policy planning. Glennan served as Director of Research and Acting Assistant Director of the Office of Economic Opportunity for Planning, Research and Evaluation before becoming the first Director of the National Institute of Education in 1972.

Michael Huberman has conducted research on knowledge dissemination and use roughly since 1980. Apart from articles and monographs, his major texts include *Solving Educational Problems* (Plenum, 1978, with R.G. Havelock) and *De la recherche à la pratique: elements de base et mode d'emploi (Putting research into practice - with a user's guide)* (P. Lang, 1991, with Monica Gather Thurler). At present, Huberman is Visiting Professor of Education at Harvard University, senior research sssociate at the Network, Inc., and senior consultant on dissemination at the National Science Foundation.

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Tommy M. Tomlinson is a senior associate at the Office of Educational Research and Improvement, U.S. Department of Education. He represented OERI to the committee that produced *Research and Education Reform*, the 1992 report on the federal role in education research and development. In the early 60s, he taught psychology at the University of California, Los Angeles, leaving there for Washington, DC, to join the federal government's "war on poverty" in 1968. During the past 10 years, he has directed the assembly of research on elementary and secondary education for the education commission that produced *A Nation at Risk*, was editor and contributor to *What Works: Research About Teaching and Learning* and contributing author and editor of *Motivating Students to Learn.*

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Paul M. M. van Oijen studied psychology (specializing in research methodology) and worked for 10 years as a researcher and research manager in educational science and in the science of science. His Ph.D. study was based on a comparative analysis of the functioning of research policy in 10 Dutch ministries and contains a methodology for research programming. Since 1983, he has worked at the Ministry of Education and Science where he has been responsible for science policy on the humanities. For 7 years, he was vice director for future studies on higher education and coordinator for policy research on higher education. Since 1992, he has coordinated the policy evaluation and research for secondary education. He has published about 10 books and 20 articles on educational research, policy research, research management and on international comparisons involving education.

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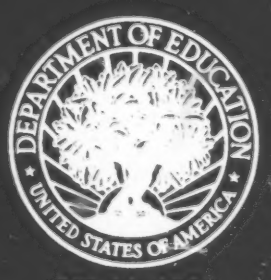

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